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THE GEOGRAPHICAL KNOWLEDGE OF THE ATLANTIC IN THE TIME OF CHRISTOPHER COLUMBUS.

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AT this time, when everything relating to Columbus and his discovery is of such great interest, the accompanying paper on the geographical knowledge of the Atlantic at that period presents—in a very striking manner—the tremendous difficulties which he had to surmount.

The many articles which have been written about him deal more particularly with the obstacles which had to be overcome in the way of official recognition and financial support, and in the gathering together of sufficient seamen to man his little vessels; but attention has seldom been called to the following important phase of the subject, and such knowledge can only increase our wonderment. The marvelous accuracy of his calculations shows him to have been far in advance of his day, as is evidenced by his having so closely computed the value of the degree of longitude on the parallel on which he intended to sail, as well as by the numberless other proofs he gave of his thorough familiarity with the science of navigation, and its kindred studies of astronomy and geography, as to cause him to be deemed a visionary.

As we see, he alone, of all his squadron, was able to correctly reckon his position; and it is well known that he never gave out the true distances run, being fearful of the result upon his crews, who were terrified enough as it was. We here see how this deception could be practiced

when we remember that the *log* was not in existence, and that there was no method of estimating the ships' speed, save by the eye, day or night. Unlike the Mediterranean, there were no familiar landmarks on this dreary waste of waters with ascertained distances between (which were well known), for them to form some estimate of their rate of travel, and give them an idea of the space between them and their native shores. Columbus's practiced eye and unerring judgment, alone, arrived at a close approximation.

There was no way to obtain the longitude then but this hap-hazard one of judging of the rate of the vessels' motion through the water, and calling every fifty-four (54) of these *estimated* miles a degree of longitude. The factor of the variation of the magnetic needle could not enter into his calculations, because it was unknown, and this circumstance created the first real alarm. In the historical account of Columbus previous to this voyage, by the Baron Bonnefoux, referring to this incident, he says,—

"The ingenuity of Columbus soon devised a plausible reason to account for this in the fact that the pole star, by means of which it was detected, was not itself stationary, but described a circle around the pole of the world. This was enough. The Admiral displayed the knowledge for which he had full credit, and his crew were pacified, not being aware that although the star really does describe such a circle, equal in diameter to about six times that of the sun, it was by no means equal to the change observed in the direction of the needle. Still it was a fact, and served to quiet their apprehensions that the needle itself would forsake them if they proceeded towards the west.

"The circumstance is interesting as being the first discovery of the variation of the compass,—at least, that it differed in different parts of the world. Thus the needle of the compass, which had shown easterly variation on the eastern borders of the Atlantic, from whence the ships had come, was now discovered to have changed its direction an entire point westerly. This took place on the 17th of September, about one hundred leagues to the westward of the Azores, when the ships had been eleven days out."

The author, in his paper, gives the date of this occurrence as September 13, while the foregoing account (to be found in the "Landfall of Columbus") places it four days later. The noted Spanish hydrographer, Señor Navarrete, who devoted so much attention to the subject, and who is one of the most zealous advocates of Columbus, claims for him the honor of having discovered the variation of the compass, though, as *easterly* variation was then known, the *change* of variation would be the more correct statement. "Columbus having crossed the line of *no* variation, and finding it more than a point *westerly*, when he was on a meridian one hundred leagues west of the Azores, it could not but draw his attention to the subject, as well as that of the pilots with him,

and thus give rise to his observation of the motion of the pole star."

The other event which added so greatly to the disquiet of the Admiral was the circumstance of the shifting of the wind to the southward and westward (23d and 25th September). In the "Landfall" this occurrence is assigned to the 22d, and, while it caused uneasiness at first, Columbus took advantage of it to allay the fears of his men, who had become terrified at the ever-increasing distance from Spain. Heretofore the wind had always been from the northward and eastward, and, therefore, unfavorable for their return. In his journal, the Admiral says, "Much this contrary wind was wanted, for my people were becoming very anxious, believing that the wind in this sea was never favorable for returning to Spain."

We see then how, in spite of the many discouragements which arose, his superior knowledge and native ingenuity enabled him to turn them to account; he still kept the pole star on his starboard beam, and the "Santa Maria's" head to the west, till his dogged perseverance was at length rewarded with a glimpse of that light on the shore which he had so long and so patiently looked for,—though we cannot quite agree with Castelar that the land he sought *would have been there anyhow*, because of his marvelous faith, even if it had had no previous existence. *He* was the miracle, himself.

The "Aids to Navigation" in those days were crude indeed, as an examination of their charts will show, and these form a very interesting feature of the paper. Continents and islands were sprinkled here and there, as the imagination or legend dictated, and ominous warnings were inscribed to prevent the too-venturesome mariner from verifying their (in)accuracy. It is hardly to be wondered at that the men were so frequently on the verge of mutiny, considering their dread of the unknown dangers ahead, or their fears of being unable to sail back against the steady breeze driving them to the westward, when ignorance —even among the learned men of the time—was so dense, and the idea that the earth was a sphere was considered the chimera of a disordered imagination.

Referring to the legends mentioned by the author as appearing on the charts of the time, the following, from the collection made by Senhor Macedo, of Lisbon, shows the absurd ideas, prevalent at the time, which must have influenced the minds of the crews.

"The ancients had different opinions about the possibility of navigating the Atlantic Ocean:

"1. Seneca had taught that, with a fair wind, a very few days would be required to navigate it from Spain to India.

"2. Others considered that the magnitude as well as the solidity of it would prevent the possibility of navigating it from Spain to India. Eratosthenes and Strabo were of the same opinion.

"3. Others again looked on the ocean with a kind of sacred horror, for they believed that the sun, at setting, entered it, making a noise similar to that produced by a hot iron when entering water. This extraordinary idea is attributed by Cleomedes to the Iberians, and appears to be confirmed by Posidonius, who refers to it, and combats the common belief that the sun became larger as it descended to the watery plains adjacent to Spain, and that the sea made a noise as if a red-hot iron fell into it, as if the sun really became extinguished by falling into it. This opinion is similar to that of Epicurus, who held that the sun was extinguished at setting and was lighted again at rising. Several others of the ancient authors are cited by him as having held similar opinions, and he adds that these opinions were not confined to the Iberians, but were common on the shores of the German Ocean, the inhabitants of which, not content with supposing that they heard the noise of the sun sinking into the ocean similar to the wheels of a chariot, as Statius taught, actually believed that they saw the forms of the horses of the chariot, and the radiant glory of his head.

"4. Others again, as Syclax, Plutarch, and Jornandez, believed that no ship could navigate the Atlantic on account of its *shallowness* and its *muddy nature*, and its *growth of weed*, all of which would combine to prevent it. . . .

"5. Others considered the ocean was immovable, and also impenetrable from its muddy nature, or from want of wind: other causes, too, such as the appearance of hideous monsters, portentous signs, extraordinary lights in the midst of obscurity, combining to render it difficult for any one to travel there; the stars failing the mariner as celestial guides, whilst terrestrial experiences of course were wanting. And others, from all or some of these opinions, formed a general idea of their own; combining mud and shallows, immobility and darkness, and want of wind, with multitudes of marine monsters to terrify seamen, supplying every absurdity which the imagination could devise to render the sea unnavigable, in their opinion.

"Thus was the Atlantic described in the days of old, and nothing was better calculated to produce unfavorable impressions on men's minds than were these idle tales. . . . The idea that the torrid zone could not be passed by ships by reason of its heat being so great that seamen could not endure it, and that it would melt the pitch out of a vessel's sides, had been proved wrong by the progress made by the Portuguese along the African coast. Still the Atlantic Ocean had been from time immemorial the "Sea of Darkness," and, as seamen in every age are proverbially superstitious, the desire of those with Columbus to turn back as soon as the land was lost to view, with even the fragments of such stories as the foregoing in their heads, was very natural . . . but, to the very end of the voyage, when matters became worse, he could not imbue their minds with his own views and feelings."

It must ever be a source of regret that the chart used by Columbus, and attributed to Toscanelli, should have so completely disappeared as to leave no trace of its existence; but it is very probable that it must, in a great measure, have very closely resembled that of Martin Behaim (an illustration of which is shown in the accompanying article) which was constructed in 1492, just previous to Columbus's departure. When we remember that the author of this map—as well as Toscanelli—was one of the two chief advisers of the Admiral, and that these two counsellors so closely agreed in their calculations and theories, the inference, naturally, must be that their *charts* would also have a corresponding similarity. Notwithstanding that they were, confessedly, the standard authorities on geography and cartography, an excellent idea of what was *not* known may be gathered by an examination of the documents they produced, and the fanciful stories appended to them, specimens of which are here given, relating to the very islands Columbus set out to discover.

In his correspondence with Toscanelli in 1474, Columbus advanced the principle of the sphericity of the earth, which (with the corresponding deductions) was held to be an extremely rash assertion. Dividing the equator into three hundred and sixty degrees, he allowed that the ancients had knowledge of two hundred and twenty-five of these degrees, included between the Fortunate or Canary Islands, the western boundary of the known world, and the eastern extreme of Asia. The discovery of the Azores added fifteen degrees more to this knowledge, thus making two hundred and forty degrees, or two-thirds of the globe.

Toscanelli's[1] reply was most encouraging, referring to Marco Polo's travels in the previous century, and to his having traveled beyond the limits assigned by Ptolemy, even to the most distant point of the Asiastic continent. He recognized the extraordinary tendency of Columbus's project, earnestly begging him to carry it into effect, assuring him that the province of Mangi near Cathay (China) was but *thirteen hundred and fifty leagues away*, and expatiated upon this wonderful country—the magnificence of the Khan, the splendor of his capitals, Cambalu and Quinsai, and the richness of the island of Cipango, near Cathay,—probably meaning Japan. (See Martin Behaim's chart, 1492, and that of Marc de Bénévent, 1508.) Toscanelli accompanied his disquisitions by a chart (no doubt the missing one) on which were delineated the western coasts of Europe and Africa, separated from the eastern shores of Asia by only thirteen hundred and fifty leagues, and Japan, Antilla, and many other islands of less importance appeared at different distances from each other. This reply made a very deep impression on Columbus, as in all his voyages constant reference is made to Cathay and Japan, with which he had thus become familiar.

[1] See "Landfall of Columbus," by A. B. Becher, R.N., F.R.A.S.

In the light of the foregoing, in addition to the deductions drawn by the author in his paper, a study of Behaim's chart leads to the conclusion that the latter is, most probably, similar in all essential points to that used by the great navigator in his voyage of discovery.

Captain Becher has given, in a condensed form, notes from the Journal of Columbus, as prepared by the Spanish hydrographer, Navarrete, which are exceedingly interesting, but too lengthy to reproduce in the limits of this paper. I will give some extracts only, bearing upon points mentioned in the accompanying article.

In order to determine the scientific conditions which guided the hardy mariner in his voyage into the unknown, it is necessary to show by an analysis of the charts of the time the ideas of the form of the earth held by the learned men who were contemporaries of Columbus, their geographical knowledge of oceanic regions, and, also, the many legends current at the time.

It is well known that—during his sojourn at Lisbon—Columbus was intimately associated with both Martin Behaim and Toscanelli, and that the *chart* which the latter gave him, as well as his advice, very materially aided him in the ripening of his project. The former, who was mariner, astronomer, and cartographer, and who had cruised as far as the Azores, was well qualified to impart the necessary *technical* information needed to complete and render practical the ideas of Toscanelli. It was he who constructed the celebrated globe which was completed in 1492—the year of the departure of Columbus—and which was the most precise document then possessed of the geographical knowledge of the time when Columbus sailed on his voyage of discovery.

What, then, were the ideas of the form of the earth held at that date, and of its various countries, and what graphic means were employed to represent the relations of space?

The graphic representation of the different regions of the world was modeled upon the method employed to represent—whether upon globes or plane charts—the relative positions of the stars. Astronomy had long preceded geography, and, whilst we can get a correct idea of the form of the earth only by navigating entirely around it, we can form very clear ideas of the heavens without stirring from home. In the course of the year, three-fourths of the stars pass before our eyes and the least attentive observer must be struck with their relative fixity.

From the earliest times, it has been attempted to represent the positions of the stars, and to delineate them upon globes and charts. One hundred and fifty (150) years before Christ, Hipparchus invented the astrolabe, which was used to measure angles, and showed the relative positions of the stars upon charts.

The division of the day into hours led to tracing the meridians

Day of Week.	Day of Month.	Course.	Distance Run.	Remarks.
Thurs.	Sept. 6			Left Gomera. Lying becalmed between this island and Teneriffe.
Fri.	" 7			
Thurs.	" 13	W.	33	A current from the westward observed. On the evening of this day the needles of the compasses showed *westerly* variation, and on the following day it was observed to be *greater*.
Mon.	" 17	W.	55	More hopes of land. Pilots found compasses to have *more than a point westerly* variation.
Wed.	" 19	W.	25	Pilots produced their reckonings: "Niña," 440 leagues from Canaries; "Pinta," 420. Admiral, 400 *exact—considered right.*
Sat.	" 22	W.N.W.	30	A contrary wind occasions the remark, "Very necessary this was, for the crew, believing the wind was *always* east in these parts, and would prevent their return to Spain, had become very mutinous."
Sun.	" 23	N.W. W.N.W. W.	22	. . . Sea smooth and still. Crew murmured, complaining there was no wave and they should never return. Afterwards the sea rose considerably without wind, at which they were terrified. The Admiral observes, "The high sea was essential to me, which had not been seen before, except when the Egyptians pursued the Jews when Moses delivered them from captivity."
Sun.	" 30	W.	14	. . . The Admiral observes that the stars called the Guards (Pointers) at nightfall are in a line to the west, and at daylight are to the N.E. Also at the same time the compass-needle varies a point westerly, and at daylight points to the star, by which it appears that the star has a motion like the rest, as the needle is always correct.
Mon.	Oct. 1	W.	25	The Admiral compares reckoning with his pilot, by which it appears: *Pilot* was 580 leagues from Hierro. *Admiral* acknowledges 584; *but his private reckoning was* 707.
Sat.	" 6	W.	40	Martin Alonzo Pinzon proposes to alter course to S.W. Admiral was of opinion that he did not care about Cipango, and that if this was missed land would not be seen so soon, and that it was better to discover *terra firma* first, and islands afterwards.
Sun.	" 7	W.S.W.	28	The "Niña," being ahead of the Admiral, made signal for land by a flag and firing a lombard, as previously determined. Agrees to steer W.S.W. for two days.
Wed.	" 10	W.S.W.	59	Crew turbulent and mutinous. Admiral endeavors to satisfy them and encourage them with the prospect of reward, alluding to the great advantages that would arise from discovering land. *At any rate they might complain. He had come to discover India, and he should persevere till he had found it with the help of the Lord.*
Fri.	" 12			Land sighted at 2 A.M.

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upon the globes, and the movement of the sun in the ecliptic, to parallels of declination. The chart, with its meridians and parallels, afforded such facility in finding the position of the stars, that, whenever it was desired to represent graphically different points of the earth's surface, on maps or globes, recourse was had to the same method, and these lines were called latitude and longitude.

The latitude, which is the arc of the meridian included between one's position and the equator, is very easily determined by observation of the sun at noon with the astrolabe.

This geographical information can also be attained from the ancient charts with a certain degree of approximation,—at least for the principal points.

It is not the same with the *longitude*, however, which is a measure of time, and for which, before the invention of chronometers, there existed only very imperfect means of observation. In order to determine it, they measured the distances traveled (on land or on sea) and referred them to the scale of the latitude.

Likewise, geographic science commenced with descriptions of various routes, and their distances, while the representation on maps or globes extended only to the period when navigators ventured far enough from the coast to lose sight of land for several days.

Among the ancients, geographic knowledge was possessed by a small number of learned men only. Down to the end of the fourteenth century of our era, this knowledge was confined to the merest suspicion or conjecture of the sphericity of the earth, and the vaguest conception of its dimensions, which were considered much less vast than they really were.

The positive ideas of Europeans were limited to the Atlantic Ocean on one side, and to the Indian Ocean on the other: they included—outside of the countries of Europe, Asia, and Africa bordering on the Mediterranean—England, Germany, Arabia, Persia, and India. The idea of the sphericity of the earth was not really entertained until after the first voyage of circumnavigation in the sixteenth century. The *Canaries* were the first ocean islands discovered,—leaving out the incursions of the Norsemen in the North Atlantic towards the tenth century, and of which the traditions were lost sight of later. Without investigating the accuracy of the stories of the ancients relative to the Fortunate Isles, it is certain that, in 1330, some Frenchmen of Dieppe landed on the Canaries, and that they circulated knowledge of this fact among seafaring people, for we see on the chart of the Pizzigani brothers, dated 1367, the Grand Canary and the Isle of Forte-Ventura exactly located in their places abreast of Cape Juby.

From this time on, discoveries multiplied; the Azores in 1432, Cape Verd in 1445, and the Cape Verd Islands in 1456. These feats excited the imagination: ancient legends were hunted up regarding

the unknown islands towards the west, and, in 1463, a chart by Beincasa indicated—at a great distance from Europe—the "Isle of Antilla," of as vast extent as the Island of Salvaga; and, even farther away, was shown the Island of Roselia.

Finally, in 1492 (the year of the departure of Columbus) Martin Behaim constructed a chart of the world on which he attempted to represent the existing state of geographical knowledge, and on which he had placed Antilla and Cipango.

An analysis of portions of these charts is here given, and also that of Juan de la Cosa, Columbus's pilot, dated in the year 1500, and that of Mark de Bénévent, dated 1508, whereon—*for the first time*—latitude and longitude are represented. With the analysis of these charts, the accompanying legends are given, and these latter speak volumes, of themselves, concerning the errors current among the geographers of the time.

It is *certain* that Greenland, Newfoundland, and Labrador had been visited by the Norsemen long before the discovery of Columbus; but these discoveries had not been followed up for several centuries, even if the traditions regarding them had not been lost sight of altogether. It was the story of Marco Polo, and his intimate relations at Lisbon with Martin Behaim, as well as the advice and documents received from Toscanelli, which caused the Admiral to conceive the idea of reaching Cipango and Cathay by sailing towards the west.

The voyages of the Portuguese along the African coast for some fifty years made them familiar with the permanence of the northeast trade winds, and the return voyages from the Canaries and Cape Verd, as well as those to the Azores, proved the fact that variable winds, facilitating these return voyages, held for a great distance from the coast to the northward of the region of the trades.

But to rightly understand the gross errors current at the time, it is necessary to remember that Copernicus was an infant when Columbus was in Lisbon; they still believed that the earth was immovable in space, and that the stars revolved around it. They recognized a certain amount of sphericity, but they doubted if the earth was not a *disk:* they had no reason to know of the flatness of the poles, and it required considerable hardihood to even suppose the earth was round.

Nevertheless, in 1475 they ventured a considerable distance from the coast, and easily retraced their routes, inasmuch as they were aided by the mariner's compass, then known for two hundred years, at least; in addition, by means of the *astrolabe*, the *latitude* was easily determined by meridian altitudes of the sun at noon.

But, as yet, the *longitude* could only be estimated by a knowledge of the distances between well-known points on land or at sea. These distances, on shore, were measured by the actual number of *paces* between them in the entire length, and allowance made for detours and

irregularities of the surface of the ground to cover necessary error in this method of calculation; and they reckoned the distance separating the coasts of Spain and China, and the extent of the countries of Europe and Asia at almost double what they really were.

At sea, however, they could not count steps, so they arrived at a knowledge of distances by studying closely the course of the vessel, and estimating the ship's speed, *by the eye*, in marine leagues or nautical miles. The track of the vessel was always on a *plane* surface, and therefore not liable to the same cause of error that confronted the pedestrian on shore, tramping over an undulating country; but the *log* was not known—being only invented in the following century—and so the eye alone was the sole judge of speed, and this by *night* as well as by day.

The frequent navigation of the Mediterranean, and the almost daily encounter of well-known prominent points along the coasts, permitted of a constant rectification of errors made in these calculations, and resulted in a remarkable precision in this respect among the seamen of that day. Columbus, himself, possessed this accomplishment in a marvelous degree, and gave frequent proof of it. We can well understand, then, how—when out of sight of land for several days—the science of observation, in correctly estimating distance, became of supreme importance in assuring a safe return. They would also measure *time*, with a certain degree of approximation, by means of the *hour-glass*, which gave equally good results on board ship as on shore. Thus, at the time of Columbus's voyage, navigators could determine their position on the chart or globe by the observed altitude of the sun for *latitude*, and approximate the *longitude* by estimating the distance run.

We have seen that Columbus was very skillful in the construction of nautical charts, and he had early discovered that distances which he had estimated in his Mediterranean voyages, where the greatest lengths are in an easterly and westerly direction, were apt to be much too short when he cruised in a northerly and southerly direction, either towards the Gulf of Guinea or towards Iceland.

At the time, the equatorial degree was divided into fifteen leagues, and sixty minutes or nautical miles. The equatorial league, then, had a value of four nautical miles (7400 metres). But, in the Mediterranean, distances reckoned in an easterly and westerly direction, on a parallel of latitude, gave a value of only forty-five miles between two successive meridians; the marine league there, then, had a value of not more than three nautical miles (5555 metres.)

Columbus estimated that the league which he would have to traverse in his route across the Atlantic would be a little longer than that of the Mediterranean, and so he adopted one of *three-and-one-half* (3½) miles, nearly six thousand metres. Now, on the parallel of 27° north latitude, followed by Columbus, the value of a degree of longitude is

about fifty-four miles, which would make the *true* value of the marine league *three and six-tenths* (3.6) miles, so that, in his calculations, the *Admiral committed an error of only one-tenth of a mile.* It is this fact that shows the profound character of his observation, and explains why *he alone,* of all his squadron, was able to correctly estimate the distances run, and plot his position on the chart.

All these details show us that Columbus was one of the most accomplished seamen of his time, and—in the science of navigation—far excelled his contemporaries.

We have seen, from the story of the voyage of discovery, that Columbus desired to reach Cipango and Cathay, and that, according to Marco Polo, Cipango would be found in about 30° north latitude. It was his object, then, to follow a course *straight to the west,* in order that, during the night, he might always be sure of his course from frequent observation of the north star, which would thus be directly abeam and easily found. So he fixed his true point of departure from the Island of Gomera, one of the Canaries, situated in 28° north latitude. It is necessary to add that in his time the variation of the magnetic needle, on the coast of Spain, was about 3° easterly, and, consequently, his *compass* course to the west carried him a little to the *northward* and gradually increased his latitude. He could not know that some days after his departure from Gomera *the variation changed to the westward,* and that his *compass* course to the west brought him to the southward and he was gradually approaching the tropics. This change in the variation of the needle occurred on the 13th of September; this, and the shifting of the wind to the southwest (23d and 25th of September) were the nautical facts which conspired to give him the greatest uneasiness, and gave the rudest shock to his firmness. Therefore, chart in hand, he proceeded aboard the "Pinta" to consult with Martin Pinzon, and it was on this document that the course was again plotted to the westward. Now, about this time they were five hundred and forty-seven leagues from Gomera, according to the Admiral's calculations, and we see on Martin Behaim's chart that the Island of Antilla was supposed to be about 60° west of the Canaries, about nine hundred leagues distant; therefore, the Admiral had then but three hundred and fifty leagues more to sail before reaching it. Further, Martin Behaim places Antilla between the equator and 20° north latitude, and, Columbus's course being so much farther to the north, he was risking missing the land altogether. We see that on the two or three days following, from indications of land to the southward, he changed his course to the southwest, but discovering his error, he again changed back to the west, until the flights of small birds gave him the certainty of making the land about the 7th of October.

Search has been made everywhere, but in vain, for the chart of Toscanelli used by Columbus on board the "Santa Maria," and which—

fifty-three years after his death—was in the possession of Bartholomew de las Casas. We can only hazard conjecture in regard to it, and seek in the geographic monuments of the period, which still exist, the most likely documents which he would have consulted, either at Genoa or Lisbon.

From compilations of various charts previous to Columbus's time, and from others more nearly contemporaneous with his discovery, extracts from the following works are given:

"The Monuments of Geography, or Collection of Ancient European and Oriental Charts,—fac-simile reproductions in the original size, by M. Jomard" (Member of the Institute, Paris).

"U. S. Surveys, vol. i., Old Maps, Appendix F, Washington, 1889."

The most ancient of these charts was of Italian origin, as was easily foreseen: they were made at the period of wars of Genoa and Venice, during the height of their power, and present the entire Mediterranean with an exactness of detail truly remarkable for the time; the mass of coast details being such as to make them perfect guides for the navigator, as all important points along the shores—capes, bays, rivers, ports, etc. —are faithfully delineated.

We will here analyze some of the more important and interesting among them, giving extracts from those which show, either by design or legend, some glimpse of the ideas held at the time of the vast ocean spaces to the west of Europe.

LIST OF CHARTS CONSULTED AND ANALYZED.

1318. *Atlas of Petrus Vesconte.* Containing nine special charts of the Mediterranean. (Jomard collection.)

1367. *Map of the World.* Pizzigani Brothers. Three large charts. (Jomard collection.)

1376. *Catalan chart.* Extract from the manuscripts in the library of the king. Four large charts.

1463. *The Island of Antilla.* By Benincasa. Taken from the "U. S. Surveys, 1889."

1492. *Map of the World.* By Martin Behaim. Two large charts. (Jomard collection.)

1500. *Map of the World.* By Juan de la Cosa. Two large charts. (Jomard collection.)

1500. *Chart of the Globe.* By Mohamed al Charjy. Two charts. (Jomard collection.)

1508. *America.* According to Marc de Bénévent. Taken from the "U. S. Surveys, 1889."

1520. *Globe de Francfort.* Schoner. "U. S. Surveys, 1889."

1530. *Map of the World.* Sebastian Cabot. Four large charts. (Jomard collection.)

1550. *Map of the World.* Henry II. of France. Six large charts. (Jomard collection.)

1566. *North America.* By Zaltieri. "U. S. Surveys, 1889."

1318. *Atlas of Petrus Vesconte,* of Genoa. Fac-simile reproduction in the Jomard collection. Containing nine large charts comprising all the Mediterranean, and upon the ocean the coasts of Spain, Morocco, France, and England.

This is the most exact relic of ancient cartography that we know of, and the numerous angles indicating courses, direction of winds, etc., would show that the preliminary sketch or survey was made with the aid of the sea-compass. It is probably the first accurate example of this topography.

It does not contain any information relative to the ideas then current of oceanic regions, and there is no mention of the Canaries, which were not visited for fourteen years later. The method of construction of these nautical charts (*carta de marear*), however, is worthy of notice, and it was retained for two hundred years longer, down to the period when latitude and longitude were represented.

The chart of this atlas showing the Strait of Gibraltar comprises the African coast from Mogador to Bougie (Algiers), and the coasts of Spain and Portugal from the Berlengas to Barcelona. It contains a large number of names of great interest relative to the orthography and pronunciation of the names of places then in use. There is no mention of latitude and longitude, but the orientation and the relative distances are sufficiently exact for bearings by compass.

The orientation is made with reference to the north point of the compass, without correction for the variation; the scale of distances, compared with those of our charts, gives the chief divisions a value of thirty-five miles (nautical), and the smaller, a value of seven miles, or thirteen thousand metres.

Scales of the same value are employed on the charts of the Pizzigani brothers, Juan de la Cosa, and Henry II. of France. Each of the larger divisions has a value of about ten of the leagues of Columbus.

1367. *Map of the World.* Pizzigani Brothers. (Jomard Collection.)

This comprises three large charts giving the Mediterranean with great precision, and also approximate information as to the Red Sea and Persian Gulf. On the ocean shore, a very neat plan is shown of the African coast as far as Cape Bojador (called *Caput finis Africe*). To the northward appear England, Ireland, and Denmark, and a part of the North Sea, with a great number of geographic names.

Here again it is quite evident, from the numerous angles showing courses, etc., that the sea-compass was used for taking bearings. The scale of distances, without being the same as that of Vesconte, is proportionally of the same value. The place names also present some differences. The Canaries are shown on the chart. They had just been discovered, and are designated by names which have been mostly retained since. They are also accurately located with reference to Cape

Juby, the Island of Palmas being the westernmost, and Forte-Ventura nearest the coast. Abreast of Mogador is an island called Canaria, and abreast of Cape St. Vincent (Spain) is another called Bracir.

From this point, to the northward, appear numerous legends, more or less terrifying. One of these tells the navigator that "Here stands a statue indicating the source of the sea, and none must venture near it." Another, near the Irish coast, warns the mariner that if he dares proceed farther, he will become the prey of serpents, dragons, and other terrible monsters.

1376. *Catalan chart.* Notices and extracts from manuscripts in the Royal library, vol. xiv.

These consist of four terrestrial and two celestial charts, on parchment, and mounted on wood; each twenty-three inches long and eighteen inches wide. They formed part of the library of Charles V., and were deposited in the Louvre from 1373 to 1410, and later appear in the inventories of 1415 and of 1425.

The discussion upon astronomical matters on the celestial charts, and —among others—of the Golden Number (VIII.), fixes the date of these charts as of the year 1375, in the time of Peter of Arragon, and Pope Gregory XI.

These charts resemble, in name and design, the map of the world of the Venetian brothers Pizzigani, of 1367, and are precisely like them in the matter of compass bearings, etc., and without latitude and longitude. A curious feature is the placing of Alexandria (Egypt) on the same east-and-west line as the entrance to the Strait of Gibraltar. On the other hand, Cadiz is on a due north-and-south line with Land's End (England), showing the magnetic variation to be practically nothing at that point; whereas, Alexandria is placed due south of the Gulf of Adalia, in Asia Minor, and of Cape Tarkan in the Crimea, indicating a variation of 8° to 10° easterly at the time.

This chart is, to a great extent, a duplication of the Pizzigani chart, and is on the same scale as the latter, which was constructed only eight years previous (1367). Nevertheless, it contains a more complete description of the Canaries, Madeira, and the Azores (though the latter are improperly placed), these islands forming a north-and-south chain, very much in the same way as represented on Benincasa's chart (1463). The Catalan chart is an intermediary between the Pizzagani chart and that of Benincasa, but, unlike the latter, makes no mention of the island of Antilla. There are several very interesting legends, however, one of which, inscribed near the Canaries, marks the point where the vessel of Jacques Ferrer started to discover the "Golden Stream," on Saint Lawrence's day, August 10, 1346. Another runs as follows: "The Fortunate Isles are to be found on the great ocean, off the coast to the left hand, extending to the limit of the occident. They are not very far out at sea. Isidore thus writes of

them in his XV. book. 'These isles are called fortunate because they abound in everything that is good; trees, fruits, and grain. The heathen suppose them to be Paradise because of their most delightful climate, and the fertility of the soil.' Isidore also says that the trees there grow at least one hundred and fifty feet, and are laden with the greatest abundance of fruit and filled with birds. Here milk and honey are found, especially on the Isle of Capria, so called because of the multitudes of goats to be found there. The Isle of Canaria derives its name from the vast numbers of large and powerful dogs inhabiting it. Pliny, that master of geography, tells us that, among the Fortunate Isles, there is one which produces all the fruits and all the products of the earth without the necessity of sowing or planting. Its mountains are covered with the most odoriferous trees continually in leaf and bearing delicious fruits, of which the inhabitants partake as they desire, and gather their harvests with no trouble to themselves. The heathens of India believe that their souls will possess these isles after death, and that they will continue to live eternally amid their perfumes and fruits. Here they believe is Paradise, *but, to tell the truth, this is a fable.*"

In common with other charts, the Catalan maps contain a great number of compass-angles and windroses, for the purpose of aiding the navigator in determining the correct course at sea, and the changing from one point to another.

[The author here digresses briefly, to call attention to the numerous references to the west coast of Africa, and the commerce in ivory and gold carried on with places still kept up to this day; from which he infers that these commercial relations were in existence a century before the Portuguese had military occupation of those African regions bordering on Senegambia and the Gulf of Guinea.]

1463. *The Island of Antilla* (Antilia on map). By Benincasa. Taken from the "U.S. Surveys, 1889." A reproduction of an ancient chart. On this chart—much inferior in construction to those preceding—we observe the Canary group off Cape Bojador (called Bucedor), Forte-Ventura, Canaria, Palma, etc.; then farther to the northward, Madeira, Porto-Santo, Chaprara, Bracil, San Georgio, and Cervo-Marino; the latter off the northern end of Portugal, indicating the Azores, discovered in 1432.

About abreast of the strait, to the westward, at a distance of, seemingly, double that of the Azores, we find the large island of Antilla, which appears to be as vast as Portugal itself; more to the northward is another island called Salvaga, and, farther to the westward, Roselia.

On the island of Antilla we find the names of seven cities, in accordance with the legend of Saint Brandan. It is the first indication of the possibility of the existence of vast countries to the westward of Europe. There is no scale on the chart, nor latitude and longitude.

1492. *Map of the World.* By Martin Behaim.

This document is of capital importance, inasmuch as it was constructed in the very year of Columbus's departure on his voyage of discovery. It presents, in the most precise form, the *exact state* of geographical knowledge at that period, and, in all probability, considering his great intimacy with Behaim, is a counterpart of the very chart used by the illustrious navigator. It is the *first map* on which the degrees of latitude are marked, and even the degrees of longitude are indicated on the equator, though not enumerated. We see, also, that the polar circles, tropics, ecliptic, and the equator are represented.

The coasts of Africa and Europe are shown from Ireland to the Cape of Good Hope; the Canaries, Cape Verd Islands, and the Azores are easily recognized, and, moreover, very nearly in their true location. Neither Greenland, Newfoundland, nor Labrador is indicated, as extremely little was then known of them.

Far to the westward, at a distance of sixty degrees of longitude from the African coast, is placed the island of Antilla, or the "Island of the Seven Cities." It is of very great extent, and not far from the equator.

The second sheet of the map represents Asia as far as Cathay, and the island of *Cipango.*

The dimensions in longitude exaggerate the size of the Asiatic continent enormously, and bring the island of Cipango to the extreme eastern border of the chart, between the tropic of Cancer and the equator. In joining the two sheets, we find that Cipango is located about thirty degrees to the westward of Antilla.

Consequently—according to this chart—after leaving the Canaries, and following a course which gradually brought him nearer the tropics, Columbus expected to reach *Antilla* when he had run *sixty degrees,* and *Cipango* when he had made *ninety degrees,*—a distance of about five thousand five hundred nautical miles. Toscanelli, who had been so frequently consulted by Columbus, estimated that the latter should reach Cipango after he had run to the westward about *six thousand* nautical miles, or one hundred degrees of longitude. These two views closely accorded with each other, and their agreement was one of the strongest arguments in confirming Columbus in his project.

As usual, a great number of legends are inscribed on these charts, and we reproduce those which relate to Antilla and Cipango.

Legend of Antilla, called the "Seven Cities."—"In the year 565 after Christ, Saint Brandan visited this island in his vessel, and, after having remained seven years, during which time he witnessed many marvelous things, he returned to his own country."

Legend of Cipango.—"This island, called *Zipangul,* is situated at the easternmost point of the world; the inhabitants worship idols; their king is independent. Here are found gold, precious stones, and

pearls of the Orient in great abundance. In these Indian seas, navigators tell us, are more than twelve thousand seven hundred islands. The island is exceedingly rich in gold, jewels, pepper, and nutmegs."

Map of the World, of Juan de la Cosa, pilot of Christopher Columbus, made (1500) after the discovery. Three large sheets. In the Jomard collection.

The first sheet comprises the sea of the Antilles and a portion of the northern coast of South America, but the design is somewhat confused. The equator and the tropic of Cancer are shown, and a scale is given whose separate divisions have a value of thirty-five miles; numerous course angles are also indicated.

The islands of Lucayes, Cuba, Española (Haiti), and the greater part of the Lesser Antilles are shown fairly well, relatively to each other, but are grossly inaccurate as to latitude. Thus, Cuba and Haiti are shown north of the tropic; Guanahani is indicated by the name of Samana, and placed north of the east point of Cuba. The island of Habacao is badly represented and inaccurately placed,—without doubt, solely on information received from the natives.

As for Cuba, they had not yet sailed around it, and it is very poorly designed, especially towards the west; and, at the time, Juan de la Cosa knew nothing of the southern coast.

A great number of vessels are pictured on these charts, and they form quite an interesting study, as the various details of hull and sails give us a fair idea of the caravels of Columbus. Nearly all the sails are triangular, and the yards placed like those of the Mediterranean craft. Square-rigged vessels did not come into use until fifty years later, when the long passages in the northeast and southeast trades enabled them to count on a steady direction of the wind for days in succession.

1500. *Chart of the Globe.* By Mahomed-ebn-Aly-ebn-Ahmed al-Charjy, de Sfax, in the year 1009 of the Hegira. An Arab chart in the Jomard collection.

The Canaries and the Azores are indicated by a chain of islands from abreast of Cape Juby (Morocco) as far as Cape Finisterre (Spain). The design is greatly confused and incorrect, though the distances from shore are fairly good.

1508. *America.* By Marc de Bénévent.—Complement of the Ptolémée chart at Rome. Taken from the "U. S. Surveys, 1889."

This chart is the most exact and faithful representation of all that was known, or believed, of America at that date. It was designed after the discoveries of Columbus, but five years before Balboa crossed the Isthmus of Panama and discovered the Pacific Ocean.

The principal features of this chart are the following. *Terra-Nova* (Newfoundland) is shown as a peninsula of the Asiatic continent. *Gruenland* (Greenland) is also an Asiatic peninsula. In Asia we

notice the provinces of Mangi, Ciamba, and Tebet, the cities of Quinsai and Zaiton, and the isles of Java Major, Java Minor, and of Candyn.

Cipango is not shown, as the author believed that this island had recently been discovered by the Spaniards in another position, and named *Hispaniola*. He, therefore (like Juan de la Cosa), puts it a little to the northward of the tropics. Several of the lesser Antilles are shown,—Dominica, Montferra, and Matinina (Martinique).

The island of *Cuba* is not complete, and is very poorly designed. Even its name is altered. A Latin inscription informs us that the vessels of King Ferdinand, of Spain, have not pushed any farther, and it is not known if the land is an island or a continent.

As for *South America*, the northern coast is called "Terra Sancte-Crucis:" the inscription is to the effect that the Portuguese have followed the coast as far as the fiftieth parallel south, without being able to see the end of the continent.

It is the first chart representing latitude and longitude. The meridians are reckoned from 0° to 360°, from the Canaries towards the east. The projection is upon the development of a cone, not nowadays used.

The following interesting legends are appended.

1. *Mare Sugenam.*—"Here commences the Sugene Sea: the magnetic needle no longer obeys natural laws, and vessels having iron on board are unable to turn around."

2. *Island.*—"In the year 1456 these islands were completely destroyed by fire."

3. *Terra-Nova.*—"Some mariners, who formerly ventured as far as these islands, tell us that nothing on them may be touched without the greatest danger to the hands."

4. *Antilla.*—"This island was first discovered by the *Portuguese*, but, because of some treasures that they carried away, they were unable ever to find it again. People are found here who speak the *Spanish language*. It is believed that in the time of King Roderick—the last King of Spain in the time of the Goths—their ancestors escaped to this island in order to avoid the fury of the barbarians who had invaded Spain. They *have an archbishop and several bishops*. There are many islands hereabouts and many cities; the *inhabitants are Christians* and possessed of great riches."

5. *Cipango.*—"Marco Polo says that, at a distance of about fifteen hundred miles to the eastward of Zaïton, there is a large island called Sipango, the inhabitants of which are idolators. They have their own king, who is not tributary to any other sovereign. Great quantities of gold and every kind of precious stones are found there. It was discovered and occupied by some Spanish sailors, but," the author remarks, "we do not venture to locate it here, thinking that it may be

the island known to the Spaniards as *Spaniola;* in which case, all that is written of *Sipango* is true of *Spaniola*, saving, of course, idolatry."

All the charts which we have analyzed give one a very fair idea of the extent of geographic knowledge in Columbus's time. Some further remarks are added relative to later charts of the sixteenth century, indicating the progress of discoveries in this science, but it is not necessary to do more than mention them briefly.

1520. *Map of the World.* J. Schöner, Nuremburg. In the "U. S. Surveys, 1889." A reproduction of the terrestrial globe, preserved at Frankfort, on which are shown parallels of latitude and meridians of longitude. The name of *America* is here introduced for the first time, and applies to *South America.*

1530. *Map of the World.* Sebastian Cabot, pilot of Charles V. Four large boards in the Jomard collection. Latitude and longitude are indicated. Newfoundland and Labrador are shown, and the position of the Antilles rectified. The coasts of South America and Mexico, and the discoveries by Magellan, in the Pacific, are also represented. The Island of Cipango still appears with the old legend of Marco Polo attached.

1550. *Map of the World.* Painted on parchment, by order of King Henry II., of France. Six large sheets, in the Jomard collection. The degrees of *latitude*, only, are marked, and there is a scale of distances analogous to those already described.

The Antilles, greater and lesser, are very accurately placed, as well as the Gulf of Mexico and Florida; Iceland, Labrador, and Newfoundland are represented. The charts are illustrated with numerous designs of square-rigged vessels, most interesting to examine.

1566. *North America.* By Zattieri. "U. S. Surveys, 1889." The principal features in the form of the continents seem fairly well known. The Strait of Anean (Bering) is indicated, as well as Greenland. The names of China and Japan appear; the land seems almost entirely known, and only the study of details is of interest.

The foregoing analysis of these various charts is intended to set off the difference in construction between them and to indicate the chief aim of the authors who designed them.

The more ancient of these (those which show neither latitude nor longitude) were constructed with the aid of the sea-compass, and with scales of distances which were made for the use of seamen provided with the magnetic compass and who had no other means of determining their position than the compass course and distance run. It is not necessary to seek the geographical co-ordinates of a place, as on a modern chart, but simply the position of two points relatively to each other,—*i.e.*, their bearing.

Thus, for example, on the charts of the Mediterranean, by Petrus

Vesconte, the Pizzigani Brothers, and Juan de la Cosa, of which fac-simile reproductions are to be seen in the Jomard collection, we observe that Gibraltar and Alexandria are on the same east-and-west line. This does not, necessarily, indicate that these geographers *believed* that the latitude of Gibraltar was the same as that of Alexandria; on the contrary, they knew better, but the idea intended to be conveyed was that in steering by compass, on leaving Gibraltar, if they followed an east-and-west line (steered east), they would come pretty close to Alexandria. Again, according to these charts, in leaving Alexandria and steering north by compass, they would find themselves in the immediate vicinity of the Gulf of Adalia, although, really, the meridian of Alexandria passes to the west of this point, towards Meis, and a little to the east of Constantinople.

These facts show us that at that period the variation of the compass was from 12° to 15° easterly, near the coast of Syria, while to-day it is about 5° westerly.

The result, then, would be—were we to-day to follow the methods of the ancients, and attempt a graphic representation of the Mediterranean—that an east-and-west line from Gibraltar would pass through the middle of the Black Sea, and Alexandria would be located (reported) some considerable distance within the tropics, actually about the *position of Khartoum* [a difference of about 16° from its true latitude.—Translator]. Nothing was known, at the time, of the *annual change* in the variation of the needle, and the declination (variation) was believed to be *constant* for each locality. Thus, Columbus, when he discovered on the 13th of September that the variation of the compass had changed from east to west, six hundred miles from the Canaries, believed that with this new element it would be possible to determine the longitude, or distance from the point of departure.

The ancient method of topography is still used, in our day, for spaces of limited extent, but it is productive of considerable error where the distances are augmented and the points are widely separated. Thus, we see that Juan de la Cosa placed Española and Cuba to the north of the tropics, and never was able to properly locate the newly-discovered land of the English towards Newfoundland and New Scotland.

It became necessary to seek some other method of graphic representation on a plane, and to definitely establish latitude and longitude. The reduction on a plane surface of the globe of Martin Behaim, the conic projection of Marc de Bénévent, and, finally, the map of the world of Sebastian Cabot, are the attempts which preceded the nautical charts invented by Mercator in 1569. This projection is the one which is still in use, and finds the greatest favor to-day among all classes of seamen, who readily perceived the immense advantage gained in representing the ship's track by a straight line, and plot their positions on it.

[On this chart, the degrees of latitude increase with their distance from the equator, but Mercator was ignorant of the law which regulates it. It was discovered by an Englishman, Edward Wright, 1594, twenty-five years afterwards. From the manner in which the meridians are projected, a spiral on the globe which cuts them at a constant angle (the rhumb, or course) will be projected in a *straight line*, and it is this feature which makes the Mercator chart so invaluable to the navigator —C. M. McC.]

The graphic representation of the sphere on a plane being thus found, and the contours of the continents fixed, the great navigators were enabled to launch out into the unknown, and Drake—making for the first time a voyage completely around the world—demonstrated its sphericity beyond the shadow of a doubt.

A. HAUTREUX,
Vice-President Bordeaux Geographical Society.

JACK HILTON'S LOVE-AFFAIR.

I.

LIEUTENANT JOHN RANDOLPH HILTON, or more briefly, Jack Hilton, as he was familiarly known among his more intimate acquaintance, sat in the cozy and elegantly-appointed library of the paternal mansion on Madison Avenue, with the morning paper in his hands and his eyes fixed with a look of apparently profound interest upon the column devoted to sporting news. He had just completed his twenty-fourth year; was nearly six feet tall, with a form finely proportioned, clear blue eyes, light hair, and complexion to match, regular features, and of easy and engaging manners. He was an adept in all manly sports and athletic exercises; a bold and fearless rider, with an almost overweening love of horseflesh; which latter trait had, a few days before, led him, for the first time in his life, into doing a very foolish thing. He had bet—some would not hesitate to say recklessly for a person of his rather slender means—upon his favorite horse, which had been badly beaten in the late races at Jerome Park; and which fact, being duly chronicled in the morning papers, would have afforded him, it is to be supposed, food for reflection of a somewhat painful nature. But it would have been apparent to a close observer that his eyes were not following the lines; and, from his expression, that the subject-matter before him was not that which engrossed his thoughts.

This was further evinced by his suddenly tossing the paper aside, rising abruptly from his chair, and pacing up and down the room, muttering to himself, "By Jove, a capital idea! If this isn't a stroke in love's diplomacy that is sure to win, let no one hereafter say that there is the first spark of genius in Jack Hilton's noddle, that's all."

He resumed his seat a minute or two after with an air of intense self-satisfaction, and lit a cigar just as the door opened and a young man entered the room.

"Accept my sincerest condolences, old boy," were his first words, as he extended his hand to his friend. "Can't stop but a moment; but I thought you needed sympathy."

"Pshaw! I don't want your condolences or your sympathy," exclaimed Hilton. "I never felt better in my life. Congratulate me, old fellow! Congratulate me! Victory is at last in sight."

"Well, you do take it rather peculiarly, to say the least," remarked the other, laughing. "For a man who is just out of pocket a cool three hundred to ask the congratulations of—— But you know you have not won your——"

"I say I have,—just as good as won," exclaimed Hilton.

"Just as good as won? What do you mean?" cried his friend, regarding him with a perplexed look. "Are you crazy? I tell you, you have lost. Why, Excelsior came in third. Haven't you seen the morning papers?"

"Oh," said Hilton, with a laugh, "you are talking about those beastly races."

"The man actually laughs about it. Of course I am. And I must say, as the result of your first venture——"

"And I say," exclaimed Hilton, interrupting him, "confound the races! My brain was full of another matter. Sit down; I have something to tell you."

His friend, Charles Levison, drew a chair up to the opposite side of the fire-place and seated himself.

"Fire away; let fly the shafts of your eloquence, Roanoke (sometimes facetiously so called by his friends on account of his illustrious namesake), for I think I rightly surmise your theme, and I am all attention," he said, settling himself comfortably back in his chair and regarding Hilton with a somewhat amused expression.

"As my oldest and most esteemed friend, Charlie," Hilton began, handing him a cigar and relighting his own, "whom I have made my confidant all along, as you know, in this *affaire du cœur* of mine with Louise, I am now going to confide to you my next proposed step. It will bring her to my arms at once, I feel sure. I am going to write a novel. I did think at first that I would attempt a poem; something in the style of 'Childe Harold'; regular Spenserian metre, four cantos, and all that; but I'm afraid poesy wouldn't prove my winning card; my—my forte doesn't lie exactly in that direction. No; I'll write a novel."

Levison did not look the least bit enlightened. He could not see the connection between Hilton's writing a novel and his way to the fair Louise's heart. But he smoked on in silence, and awaited further developments.

"Louise, you know," pursued his friend, "besides her other charms and accomplishments, is possessed of high literary attainments; being in that respect, indeed, especially gifted. She dotes on Byron and Moore, admires sentiments strongly and warmly expressed, and inclines almost wholly to the romantic school of poets,—as she calls it; and she has often accused me of having no poetry in my soul because I don't go off into high-flown raptures, like herself, over her favorite authors. Imagine a veteran like me, a plain, matter-of-fact, hardy old son of

Mars, paying court to the Muses, and falling into ecstasies of that kind! But I am sure she likes me; though, like all of her sex, she is, of course, more or less fickle. She sort of plays fast and loose with me. One day she warms and another fairly freezes me. I don't know how often she has said to me, 'Jack, if you were only an author.' Indeed, she has said it so often, and at times, as I have thought, with such peculiar significance, that I have been tempted to interpret her meaning into, 'Jack, if you were only an author, I'd marry you.' Now, you know, I'm not literary myself,—that is, not particularly so; and there's all the trouble. Louise is so awfully literary herself that, no doubt, she has made up her mind she won't marry a man who isn't. *Hinc illæ lachrymæ.* Yes, I shall write a novel."

"Why not begin in a more modest way, with a short essay?" said Levison. "But *can* you write a novel?"

"Of course I can't. When I spoke of doing so I simply meant the mechanical or manual part."

"But, my dear fellow, it requires brains—some at least—as well as hands to be an author."

"Well, not necessarily in all cases," laughed Hilton, "judging from some of the specimens of the literary art with which the market is now glutted. But in my case, others will supply the brains."

"Ah! I see. In plain English, you will bribe some poor devil of an author to write your novel for you, which, when transcribed into your own handwriting, you will proceed to palm off upon an unsuspecting public as the offspring of your own genius."

"You haven't quite hit it," said Hilton; "but not to keep you in suspense any longer, I will now let you into my secret. But first—make me a bet; for I want to win back some of the money I lost on that confounded horse. I will wager you a hundred to fifty that I will write and have published, within one month from the present time, a good, readable novel, not of my own composition or any one else's,—better than any of Howells's, Bulwer's, or Crawford's, or any other author, and a great deal more original."

"And yet not written by any one," observed Levison, smiling at the absurdity of the idea.

"Now for my secret," continued Hilton. "I go to a circulating library and procure—say a dozen novels; or as many as I can carry away in two or three visits. From each of these I select three chapters and a half, which will give me, at the least, forty-two; enough to make a good-sized novel. The subject, of course, must turn upon love and heroism; for that is the kind Louise likes."

"But, my dear fellow," remarked Levison, amused at his friend's earnestness, "there will be no connection; no continuity of plan or plot."

"No,—but an amazing degree of variety."

"And then the names."

"Those, of course, I shall alter. There must be an English nobleman,—say the Earl of Broadlands, and his young and lovely daughter and sole heiress, the Lady Ethelinda. The rival lovers,—Sir Marmaduke Neville and the Count de Château Rouge; and a villain,—Jasper Blackmore. These are, of course, the merest outlines; the other personages and the various incidents of the story, such as murders, thrilling adventures, hairbreadth escapes, heroic exploits,—virtue triumphant, villainy defeated, et cætera, et cætera, I will work in as they shall appear in the aforesaid novels."

"A novel way of writing one, certainly," laughed Levison. "But Louise will be sure to detect the plagiarisms."

"I will take good care to guard against that," said Hilton, "as I shall select only the oldest and least-read novels I can find; such as 'Clarissa Harlowe,' 'Sir Charles Grandison,' 'The Mysteries of Udolpho,' 'Cecilia,' 'The Italian,' and other antiquated rubbish of that sort. To be sure, Louise admires the romantic and sentimental, and has read a good deal of such stuff, but I don't believe she ever waded through any of those. Of course, I shall ask her advice on certain points, and read the story to her before it is printed."

"A most wise precaution, my dear fellow," remarked Levison, with a touch of sly humor in his tone; "otherwise she may never be made aware of its existence."

"Reserve your jokes,—at least till after the event, my dear boy," retorted Hilton. "And as for my confidence in regard to that, you have my offer of a bet of a hundred to fifty."

"And do you really mean to tell me in all seriousness, Jack," asked Levison, "that you think you can write that story out and get it published within the short space of one month. And, besides, there is another difficulty in the way. The publishers would be sure to detect the imposition."

"Pshaw! publishers are used to such thefts."

"But, then, other authors may read your book and expose you. Besides, the critics would mercilessly tear you to pieces."

"Authors only read their own works. And as for the critics, the more abused a book is the more it is read. It is the very best way to advertise it, and insure it a larger circulation."

"For a man who professes not to be literary," remarked Levison, laughing, "you seem to have a pretty good knowledge of the experiences of publishers, the habits of authors, and the effects of criticism. Nevertheless, I fear your scheme is altogether too chimerical; but you have my best wishes for your success all the same. And in the mean while I will take up your bet. A hundred to fifty I think you said."

"With one proviso," said Hilton. "And that is that I am not ordered to march before the expiration of the time named. If those

rascally red-skins only behave themselves, and refrain from a breach of the peace for the next five weeks, I can have my leave of absence extended for that length of time, I am sure."

"Love and war are pretty serious matters, Jack; aren't they?" said Levison. "Bad enough when taken separately; but when they get mixed up together—— Well, one may damage the body, but it is quite sure that the other plays very havoc with a fellow's wits."

"Ah, Charlie," said Hilton, sententiously, "'the lord of the unerring bow' will some day transfix your heart with one of his fatal shafts. You will then feel less inclined to ridicule *la grande passion.*"

"Perhaps. In the mean time I shall remain in full enjoyment of my liberty, and my—wits," observed Levison. "'The lord of the unerring bow!' That is good. You get that out of Byron; so it seems you do dip into poetry sometimes."

"Oh, I'm not quite such an ignoramus, in that respect, as perhaps Louise thinks I am; and I shall soon force her to confess that she has done me great injustice in accusing me of having no poetry or sentiment in my soul," said Hilton. "And now that you know it, what do you think of my scheme?"

"What do I think of it? One word in parting, my dear boy," replied Levison, in a tone of unmingled humor and mock seriousness, as he rose from his seat, "which, as your sincere friend and well-wisher, I feel it my duty to speak. Remember Marc Antony, Hercules and Omphale, and the lion in love. They all yielded to the seduction of your 'grande passion.' And what then became of their prowess? Under the baleful influence of this same 'grande passion,' the first threw away a throne, the second laid aside his club for a distaff, and the third tamely submitted to having his teeth and nails extracted. As Jack Bunsby would remark, 'the bearings of this observation lays in the application on it.' *Verbum satis sapientis.*"

"Oh, bother your mythological rubbish! Can't you be serious for once in your life, Charlie?" cried Hilton. "I confide in you as a supposed sympathetic friend, and I find you a veritable Job's comforter."

"Believe me, Jack, I wish you all the success in the world," responded Levison. "I'll drop in upon you in a day or two to learn how you are progressing. And—let me see," pausing a moment by the open door, "a hundred to fifty, I think you said."

II.

Immediately after his friend's departure Hilton set about his arduous task, or what might be more properly called his labor of love. With the books obtained from the public library, and others borrowed from a few of his friends, he was soon in possession of the working

material from which was to arise the wonderful superstructure that was destined (as his rosy imagination pictured it to him) to win for him the hand of the obdurate and fickle Louise, and perhaps lay the foundation of his future fame and fortune. How happy and proud he would feel when he would have the right to say, "Louise, I *am* an author," and to behold her soft blue eyes turned upon his with a look of mingled surprise, love, and admiration, and hear her exclaim in tones of unfeigned rapture, "Now, Jack, I am thine. Take me!"

In order to be free from interruption he confined himself within the strict privacy of his own room, and denied himself, upon the plea of indisposition, to all callers; where he would write nearly all day and often far into the night. Not to make his transformation into a full-fledged author appear too sudden, Hilton, like some skillful tactician or wary general, bent upon the capture of some important stronghold, made his advances towards the purpose he had in view with all due precaution. Upon those evenings which he spent with Louise he would deftly turn the conversation on literary topics,—no very difficult thing to do,—and descant, in an animated way, upon the beauties of literature in general, and those of Byron and Moore in particular. Indeed, the extent and fervor of his newly-awakened admiration for her own two favorite poets equally gratified and delighted Louise. She was endowed in a higher than ordinary degree with fine literary abilities and discriminative powers, and was at times a most unmerciful critic. She disliked Browning and laughed at Walt Whitman. They did not belong to the romantic school of poets. Kipling's themes were distasteful to her; Tennyson and Longfellow, she thought, might pass, though neither was comparable, in point of interest, to Scott; but what any one who could revel in the beauties of Byron and Moore and Shelley and Keats might find to admire in the two first-mentioned poets she couldn't imagine; and more than once, when she was indulging in a merciless dissection of their respective faults and shortcomings, as they appeared to her, did a cold shiver run through poor Hilton at the thought of the farrago of nonsense that he had designed to prepare for her especial delectation.

But he had soon decided not to adhere too closely to his original plan. In the ardor of his love he had been dazzled, as it appeared to him, by the brilliancy of his conception; but when it began to pale in the calm, clear light of reason, he could not fail to become impressed with the utter absurdity of the idea. He would only avail himself of such ideas and suggestions as might be presented in the novels, and trust to whatever powers of originality or ingenuity he might possess to maintain at least some semblance of uniformity of plan and plot, incorporating verbatim into his work only such passages as should be consistent with such purpose. This would, of course, necessitate more time and labor; but with the end in view this was nothing. Whether

this would prove more satisfactory or not the result could alone determine. And now another step in the pursuance of his plan must be taken.

The next time he called upon Louise he artfully led her into a discussion upon poetry, during which he slyly intimated that he had himself once courted the Muse, and confessed to having written several poems and dainty little sonnets to the object of his affections,—when he was quite young and didn't know any better; some of which, however, had been considered worthy of a place in the columns of a country newspaper. He furthermore admitted that he had written several stories,—he didn't know but that one of them might be called a regular novel. This had been published in a Sunday paper, and highly praised by a number of his friends. He hadn't, of course, written anything lately, as his professional duties required all his time and attention; but he had never lost his early love for the poetic muse, and only regretted that he could no longer be her devoted slave. But perhaps—well, he didn't know—he might again yield to the promptings of the—the—the divine afflatus, which he felt at times very strong upon him, and—and write something more. He hadn't, of course, said anything of all this to her before, because—well, he probably hadn't thought it of sufficient importance; or—which was the more likely—because he had forgotten all about it. (Deliberate falsehoods, every one of them. But Cupid slyly winks and laughs at all such subterfuges; and the old adage justifies them.)

If Hilton had hoped to make a highly favorable impression upon Louise by these tender little confidences, he must have felt some disappointment at the way in which they were received. She laughingly remarked that she supposed all school-boys wrote poetry, and that many other children of a larger growth, whose years should have taught them discretion, were afflicted with the complaint known as the cacoethes scribendi. Poor Hilton; he was committing the same indiscretion himself, and perhaps only to be laughed at for all his pains,—the thought was dreadfully discouraging. But he tried to comfort himself with the reflection that Louise's words had always been, "Jack, if you were only an author;" and with that fact once established, she might not, perhaps, be disposed to be over-critical in regard to the quality or character of his work. "Only an author." Well, he would be one; and that was all she had wished.

But he now felt that he must lead her on to speak more particularly upon the subject of prose fiction. He desired—for reasons not at all difficult to understand—to ascertain the extent of her reading in that direction, and who were her favorite novelists.

"Louise," he remarked, in a careless tone, shortly after he had opened the discussion, "I suppose you don't care much about old-fashioned novels; those, I mean, which were written about a hundred

years ago. I know you admire sentiment, spirited action, romantic situations, and all that, but then, of course, you would never think of reading such antiquated stuff as 'The Mysteries of Udolpho,' 'The Italian,' or 'Clarissa Harlowe,' or books of that sort."

"'The Mysteries of Udolpho,'" replied Louise, "was my especial delight when I was a child; and you may laugh, but I could read it even now, though I remember nearly every word of it."

Poor Hilton; he didn't feel much like laughing. No; anything but that. He had that very morning incorporated nearly an entire chapter of that work into his own novel.

"And the others, Louise," stammered Hilton, "the—the—'Clarissa Harlowe,' 'The Italian,' or 'Sir Charles Grandison,' or—or——"

"Oh, yes," said Louise, "I have read them all; some of them twice over. In fact, there are very few modern novels I care at all about. Especially these so-called realistic novels; those of Howells and James, for instance, I think dreadfully insipid. We don't care for reading about people whom one may meet in the street every day. I don't take the slightest interest in the sayings or doings of such ordinary, humdrum folks."

"No; certainly not," said Hilton, brightening up a little; "neither do I. Your tastes are more for the romantic and the heroic; the—the love and glory style. But, of course, Louise, you have quite forgotten all about those stories, or most of them, which—which charmed your youth. Indeed, who could remember anything in novels that were spun out into six or a dozen volumes."

"I am happily blessed with a very good memory," she replied, "and generally remember nearly all of what I read. Those books, I mean, which have particularly interested me."

Hilton wished in the very depths of his soul that Nature had been less lavish of her gifts—the one at least of which she had spoken—when dealing with Louise. But, despite these discouragements, he determined to persevere to the bitter end. His work had now progressed too far for him to entertain, for a moment, a thought of abandoning it. But what if, after all, he should fail to find a publisher for it? Even should Louise approve his work, and reward him with her sweetest smiles, and warmest words of praise and encouragement, and even extol his genius, what kind of opinion might she not be induced to entertain, upon sober second thoughts, of a writer who could find no publisher sufficiently impressed with the merits of his work to introduce it to the public? In that case, could he claim to be an author at all? And then all his labor would go for nothing. He also began to harbor a suspicion that he had possibly, in the first exuberance of his feelings, allowed himself to indulge in too roseate and hopeful a view of the final issue of his scheme. And the mere idea of writing a novel, at least forty-two chapters long, hunting up a publisher, and getting

his book out, all within a month's time, now struck him as being so supremely absurd that he could hardly resist the conviction that he had made an egregious fool of himself. But these various reflections he did not suffer to dampen in the least the ardor of his pursuit. He would still persevere, for his happiness and peace of mind were so deeply involved in the stake at issue that he could not for a moment think of desisting from his purpose. And Fate—so he flattered himself—had decreed that he must go on to final triumph or defeat.

He derived, moreover, as time went on, renewed hope and encouragement from thinking that he could perceive a marked change in Louise. She appeared more glad to see him; to derive greater pleasure from his society, and to be more uniformly gracious in her manner towards him; though, apparently, she entertained no suspicion of the real motive that actuated him. Once, when recalling those early courtings of the Muse, the imaginary juvenile efforts, of which he had made previous confession, he came very near betraying his secret. "What would you think, Louise," he had said, with a laugh, "if I should turn author again? You know you have often expressed the wish that I were one."

"What would I think, Jack?" she replied, laughing herself. "I fear that I should be compelled to think, and also to say, that you had not mistaken your calling. That the profession of arms was the proper sphere for the display of your activities, and that you were far better qualified to achieve distinction upon the field of Mars than in futile dalliance with the Muse in the courts of poesy."

"And yet, Louise," said Hilton, earnestly, "you know that distinguished soldiers have achieved fame as authors. I could cite several who have gained brilliant reputations from the books they have written. And why not——?" But he would say no more. The time had not yet come for him to burst upon the astonished and delighted Louise in the full splendor of a literary glory that was destined to throw even the illustrious author of a "Ben Hur" into the shade.

His friend Charlie Levison had called once or twice, but he had found Hilton entirely too much engrossed with his work and impressed with the importance of every moment he could devote to it to waste any time in social amenities; so his visits had been very brief.

"Remember, old fellow," he said, on leaving him one morning, "one week more and the month will be up. Within this time your book must appear."

"I said in the hands of a publisher within a month," responded Hilton.

"No, you didn't," said Levison. "It is evident you are trying to hedge."

"It can't be done," said Hilton. "We will have to call it that."

"I won't accept the amendment," Levison replied, with a laugh. "The original bet must stand."

"All right; but the time isn't up yet. When it is, we'll talk about it. Drop in one week from to-day, and you shall hear what I have written."

Under the stimulus of his all-absorbing passion, Hilton had proved a most indefatigable worker. Early and late he labored away at his task, and in time had the satisfaction to behold his novel assuming quite formidable dimensions. But his work had been by no means entirely manual. Often he would lay his pen down and wrestle mentally with some knotty problem; and they were neither few nor easy of solution. Had he undertaken, indeed, an altogether original composition, he might have found his work much less difficult. He believed, or willingly persuaded himself into the belief, however, that he had maintained a sufficient consistency and thread of connection throughout his story, which, as a set task, the most ingenious and experienced author would, no doubt, have pronounced to be simply impossible. But his method was peculiarly his own, and if the result should prove to be not altogether what he had hoped for, he could console himself at least with the reflection that it was not so from his having failed to do his very best under the circumstances. He knew also that authors had sometimes made curious mistakes; and if he made a few more than they had, he could at least plead some distinguished precedents. Besides, he was quite a young author; it was his maiden effort; the public and the critics would be more lenient on that account, and not disposed to judge him too harshly.

And what if he should at first fail to find a publisher for his story? Would he not but undergo the experience of numberless other authors whose merits the publishers, strangely blind to their own interests, either could or would not see; and had not some of these authors, shamefully neglected at first and often contemptuously refused even a hearing, afterwards risen to the full noontide splendor of literary fame?

And again, what if his remuneration should be small? Did not Milton receive but a paltry ten pounds for his immortal epic; and others who might be named, the scant recognition of whose merits, pecuniarily considered, was far below their just deserts? Poor Hilton! he had indulged in a bright and happy dream; and, as in other cases, was he, perhaps, only destined to an early and bitter awakening?

One fear had troubled him at times, which was that he might be ordered to join his regiment before he had completed his work, in which case his project would have to be indefinitely postponed.

But as the days went by without this apprehension being realized, and he had nearly ended his sixth week of labor, he now felt entirely confident that he would have sufficient time to finish it. And in a day or two more this would be accomplished.

III.

The last word had been written. His *magnum opus*—the crowning triumph of six weeks' unremitting labor—was finished, and Hilton threw himself back in his chair with a profound sigh of relief. Never, perhaps, did author view with fonder hope or brighter anticipation his first literary offspring than did he the goodly piles of manuscript that lay before him; and to-night—he almost trembled at the thought—would he know whether that hope was to be realized or cruelly disappointed, and melt away, like the baseless fabric of a vision, into thin air.

Levison called upon him, by appointment, in the morning to hear portions of his story read, for Hilton was desirous of first obtaining his friend's opinion, and of noting the impression that it made upon him. So lighting their cigars and seating themselves comfortably in their chairs, Hilton with a markedly sober and serious expression, and Levison with a highly amused and expectant look, as if anticipating a rare treat, the former gathered together a number of the loose sheets of his manuscript and arranged them in order preparatory to reading.

"I suppose it doesn't make much difference where you begin," remarked Levison.

"I will give you a number of extracts," said Hilton. "You don't suppose I'm going to read the whole thing through to you, do you?"

Seeing that his friend was, apparently, in no mood for joking, Levison tried hard to assume a serious air, but his sense of the ludicrous getting for a moment the better of him, he could not refrain from saying in a slightly deprecatory tone, "I hope not, indeed, old fellow. But begin where you please," he added. "As the thing has neither head nor tail to it—a sort of nondescript monster, you know—it makes no kind of difference, of course."

"The chapters are necessarily somewhat short," said Hilton, not noticing his friend's slyly humorous thrust, "on account of the extent of ground I had to cover; but I will begin with these two, which are the longest."

As the reading progressed, Levison tried hard not to laugh. He would, perhaps, have found it difficult to say which amused him most, Hilton's perfectly serious and earnest manner, or the highly ludicrous character of the matter to which he listened. He had to pinch himself severely, on the sly, several times in order to maintain a becomingly solemn expression and to manifest a (literally) painful interest in those passages which were intended to be especially pathetic and soul-harrowing, and thus repress any tendency to a risibility that otherwise he might have found it impossible not to betray. As an offset to this, however, he relieved himself by giving full vent to his mirth over passages of a designedly ludicrous nature; though he would have found

it hard to tell which one indeed of those he had heard read might not have been justly entitled to such a character.

When Hilton had finished, Levison exclaimed, "Capital! First rate! Couldn't have done better myself. But it does seem a little strange now, doesn't it, that the wicked old Lord Melville, who was so unmistakably murdered by those four ruffians at the instigation of his much-abused and long-suffering old wife,—so unquestionably dead and buried,—should have turned up alive and smiling in the next chapter as the husband of the youthful and virtuous Ethelinda, and who was old enough to be her great-grandfather?"

"I may have got mixed up a little in some places," replied Hilton. "But you know such discrepancies appear sometimes in novels; in fact, in the works of nearly all writers. None are infallible."

"By the way, what is the title of your book?" asked Levison.

"The title? By Jove! I never thought about that," exclaimed Hilton. "I'm glad you mentioned it. Let me see——"

"Why not," suggested his friend, "as your novel is of a sort of nondescript character, you know, take a hint from Wilkie Collins, and call it No Name."

"Not original; besides being altogether too prosaic."

"I should hardly suppose," observed Levison, in a slightly humorous tone, "that such a trifling little matter as a lack of originality would trouble you very much."

"I have it!" cried Hilton, as if illuminated by a sudden ray of inspiration. "I will call it Love and Glory. That will catch Louise's fancy right off."

"Well," said his friend, rising from his seat, "I have not the slightest doubt that your novel will make a marked impression upon her. But, my dear fellow, hadn't you better number your pages? You may get them mixed up, and that you know might prove—confusion worse confounded. But I must be off. If agreeable to you I will drop in to-morrow to learn the result. And," he added, pausing a moment after he had opened the door, "I believe it was—wasn't it—in one month's time, and a hundred to fifty? Good-by."

But Hilton was not to have the pleasure of reading his story to Louise that night. Levison's prediction of the possible consequence of his friend's having neglected to number his pages had unfortunately come true; for in collecting the loose sheets together he had found them so badly mixed up (though Levison would probably have told him, in his aggravatingly humorous way, that could have made no possible kind of difference) that it required the remainder of that and the greater part of the next day to bring order out of chaos, which was attended with about as much difficulty as a novice in the art would experience from his first attempt to put together the various ingeniously-constructed pieces of a Chinese puzzle. He finished his task at

last, however, and having numbered and divided the sheets into several separate packages, and thus duly prepared, he took his way to the home of Louise.

He found her seated in the library, and, fortunately, alone. She was writing at a small table in one corner, with an open book lying before her, but rose upon Hilton's entrance, and gave him a cordial welcome. She appeared, indeed, to be in an especially gracious mood, which he was disposed to regard as a happy augury. He wanted to break the ice as soon as possible and take the first plunge; but he did not know exactly how to begin.

"Composing a poem, Louise?" he said, with a smile, observing the nature of her occupation.

"A mere trifle that I have just dashed off," she replied. "It is a translation of an Italian love-song, or serenade. You shall hear it, and give me your opinion of it." She took the paper from the table, and read, in a clear, full, musical voice, as follows:

"As on the dusky brow of night
One solitary gem
Pales with its rays each lesser light
In her broad diadem,

"So come thou forth, my soul's desire!
And thy bright eye of love
Shall shame the ineffectual fire
Of those dim orbs above.

"As the sweet moon, with modest gaze
Upon the limpid stream,
Beholds within its liquid rays
Her own reflected beam,

"So thou, my star, serene and fair!
Shalt view within this breast,
In brighter rays reflected there,
Thine image deep impressed.

"To thee I now attune my lute,
My pleading voice I raise;
Surely thine own will not be mute
My song to blame, or praise.

"I do but ask a word of thee,
A whisper, or a sigh;
If it breathe not of love for me,
Then, hapless, I shall die."

"Beautiful! Exquisite!" exclaimed Hilton, enthusiastically. "Such tender sentiment! Such melting pathos! And now, Louise," he added, in a slightly hesitating voice, "I should like to—to—have you listen to a—a composition of mine."

"I should be delighted to, I'm sure," she responded, graciously,

eying with a partly curious and amused look the several packages of manuscript of which Hilton now divested his pockets and laid on the table in the middle of the room.

"What may be the subject and title of your poem?" she asked.

"It is not a poem," he replied, "but a novel, entitled Love and Glory. And before I place it in the hands of a publisher I wish you to hear it, and offer such suggestions, by way of improvement, as you may think advisable."

The idea of Hilton's appearing in the *rôle* of an author afforded Louise not a little amusement. "You have kept your secret well, Jack," she said; "but I should have thought you would have sought my valuable advice while at work upon your novel. It might have saved you some trouble."

"The truth is, Louise, I wanted to—to give you a little surprise."

"You have certainly done that," she observed, with a laugh, "for I never should have thought that you, who—but I won't begin to criticise you before I have heard your story."

"I want your candid opinion, Louise. And I hope you will not allow your native sense of politeness to get the better of your judgment."

"You need have no fear of that; for I assure you that you will find me a most impartial critic."

She pushed her book and writing materials to one side of the table, and reclining comfortably back in her chair, waited for Hilton to begin.

He picked up one of the packages, untied it, and after glancing over the pages to see that it was the right one, began to read in a clear, steady voice, Louise meanwhile maintaining an air of close attention and an unbroken silence.

The first chapter contained a somewhat elaborate description of an ancient English baronial hall of the time of James the First, which he had copied verbatim out of an old novel. The second was devoted to an account of the appearance, manners, and habits of life of its noble proprietor, the Baron of Broadlands, his two lovely and accomplished daughters, the ladies Elfrida and Ethelinda, the names alone being changed, and their respective lovers, also purloined from the same source; and the third gave a description of a grand tournament gotten up by the aforesaid lovers for the especial delectation of their respective mistresses, for which he had drawn heavily from "Ivanhoe," making only such changes as seemed advisable, but into which he had committed the anachronism of introducing as the victor a valiant knight and trusty follower of Richard the First,—the incidents of his story being supposed to occur within the first half of the seventeenth century,—retaining, even through inadvertency, his very name.

All had been plain sailing up to this point; but in the fourth chapter

the complications commenced, and the plot began, literally, to thicken. The scene changed to a lonely and ruinous old tower on the Rhine, in one of whose upper rooms sat a dark-visaged and repulsive-looking man deeply brooding over some wrong he had suffered, in some unexplained way connected with the Baron of Broadlands, and in whose blood he very audibly and ferociously expressed his intention of imbruing his hands. Several times, indeed, he breathed forth slaughter and destruction upon the whole family, including the lovers, and devoted to irremediable ruin the baron's entire fortune and estates.

Leaving him to his gloomy meditations and sanguinary resolves, the reader was now transported, with all the ease and celerity of the enchanted carpet in the story, to a wild and desolate moor in Yorkshire; and there suddenly appears upon the scene an honest old farmer, one Obadiah Dumbedykes; though whence he came, or for what purpose, or why, indeed, he should have come at all, is not made apparent. He is first seen wending his way slowly and thoughtfully over the moor, pausing at times, sighing deeply, and occasionally shedding a tear, and mumbling to himself. "He was thinking," to quote the words of the novel as Hilton read, "of that luckless morning when he discovered at the bottom of his well, as he supposed, the gory head and one of the fingers of the Lady Blanche Melville, who was barbarously murdered by her husband in an uncontrollable fit of passion, and who afterwards cut her up into small pieces and distributed her promiscuously about the neighborhood; but who, on a closer examination, discovered them to be the head and finger of his own daughter, who had eloped from the paternal roof twenty years before with some gay Lothario, and of whom nothing had ever been heard until the grief-stricken father had thus brought to light the ghastly remnants of his long-lost and beloved child."

Up to this time Louise had preserved strict silence; but here, not a little to Hilton's astonishment and discomfiture, she broke into a loud laugh.

He had regarded this as one of his most touching and pathetic passages, and he could not help feeling a little nettled, to say the least, at the way in which it was received.

"Perhaps you think that's funny," he remarked.

"Awfully," she replied. "But forgive me, Jack," she added, in a tone of contrition. "I promise not to offend again. But, how did those things get into the well?"

"That's for you to surmise. You don't suppose an author is bound to explain everything, and leave nothing to the imagination of the reader? If he did, what would become of all the mysteries in the story?"

Hilton resumed his reading, and now entered upon his fifth chapter, in which, after disposing of Obadiah Dumbedykes by making him

disappear as mysteriously as he had come, he returns again to the baronial hall of Broadlands.

But a sad change has come over the fortunes of some of its inmates. The fair Ethelinda is sorely persecuted by the attentions of the old and wicked, but immensely rich, Lord Melville, who, unknown to her, has a wife living in a distant part of the country. Her lover has been waylaid and carried off, none know whither, though more than suspected to be the work of agents of his rival, the wicked old lord. The lover of Elfrida has also to confront a rival suitor in the person of the Earl of Loch Lomond, a young Scotch nobleman, by whom, for a gross insult offered to him, he is challenged to mortal combat and run through the body, expiring shortly after in the arms of his second. After three times endeavoring unsuccessfully to poison herself, Elfrida finally resolves upon becoming a nun, and, accordingly, enters the convent of Saint Theresa in Italy, the Lady Superior of which happens to be her maternal aunt. And here followed a rather unnecessarily minute description of the convent itself, and the mode of life of its inmates, for which Hilton was indebted to several solid pages of "The Abbess."

In the beginning of the sixth chapter, a stranger arrives at the hall late one stormy night, and demands immediate audience of the baron, mysteriously intimating that his business is of a highly important nature, and will admit of no delay. On being admitted to the presence of the baron, he introduces himself by the name of Jean Gaspard; and, from the style of his dress, general air, and the peculiarly sinister and forbidding aspect of his countenance, has all the look of a professional cut-throat. He informs the baron that he is the possessor of a secret of the utmost importance to him, in which not only his daughter's happiness, but the honor of his family, is involved. This secret he offers to sell to the baron for a satisfactory consideration, which he names. But, considering the price exorbitant, his would-be purchaser refuses to pay it, and after wrangling over the matter some little time, they compromise for half the amount. He then discloses to the baron the fact that Lord Melville, the suitor for his daughter's hand, already has a wife living in England; but, not doubting that he must be greatly desirous of promoting so highly advantageous a match, pecuniarily considered, and allying himself, matrimonially, with so illustrious a house as that of Lord Melville's, he offers for a further consideration to remove the old lady to the farthest wilds of Siberia, or through the quicker and surer means of poison.

This proposition the baron receives in high dudgeon. His sense of honor is outraged, to say nothing of the ordinary instincts of humanity, and in a sudden spasm of virtuous indignation he unceremoniously kicks his visitor out of the room. Thus ignominiously repulsed, the latter takes his departure, giving vent to a frightful explo-

sion of Gallic oaths, and vowing dire vengeance upon the baron and his entire family.

Lord Melville, being confronted shortly after by the baron with the charge of being already married, vehemently denies it, and engages to convince him of its falsity. He takes leave of his host for the purpose of procuring, as he says, the necessary evidence to the truth of his words, but with the secret intention of going immediately home and murdering his wife in cold blood, and thus removing the obstacle that stands in the way of the gratification of his wishes. The old lady has stolen a march upon him, however; for having suffered long enough, she makes up her mind, from his brutality and infidelities, she hires four ruffians to rid her of such a monster; and, in consequence, Lord Melville, when about two miles from home, is waylaid and barbarously butchered.

IV.

"Pardon me, Jack," said Louise, as he made a pause here, "but—I don't quite understand. No doubt it is my own stupidity, but I somehow got the impression that Lord Melville had already murdered his wife. And—I should like to know whether this Jean Gaspard is in any way connected with the man in the tower on the Rhine, mentioned in a former chapter."

"I—I am afraid," replied Hilton, seeming a little confused, "that—that I have misplaced the chapters; a simple mistake in numbering them, but which I can easily correct."

"Or you might," suggested Louise, in a slyly humorous tone, "leave the reader to infer that it was a former wife he had murdered."

"A brilliant idea, certainly," laughed Hilton, in reply, "but I think I had better make the needed corrections. And, besides, I may have got the cart before the horse in other places. It would be best, I think, to look the story carefully over before I read any further."

"But, Jack, as Lord Melville has certainly been murdered, and before he had the opportunity of performing the office of executioner himself, I think you had better omit the fourth chapter altogether, as your honest old farmer Dumbedykes seems to be a somewhat incongruous element in the story. But read two or three chapters more, and we will then adjourn the entertainment to a future occasion."

In compliance with her request Hilton read the three chapters following. In the first one the abducted lover of Ethelinda turns up as the leader of banditti among the romantic wilds of the Apennines. A description of the scenery is given,—verbatim from "The Mysteries of Udolpho,"—followed by a brief account of the cave and habits of life of the robbers. In one of their excursions the band captures three or four stray nuns, who have wandered too far away from their convent and become lost among the fastnesses of the mountains. The leader is

about to appropriate to himself, as his share of the booty, the best-looking one of the lot, when to his astonishment he recognizes in her the sister of his long-lost but still beloved Ethelinda. Mutual explanations follow. He learns of the death of his former hated rival,—though how she came by the information does not appear,—but believing he has forever lost the object of his affections, he makes honorable love to Elfrida, and urges her to become a sort of maid Marian to the band. Weary of the confinement and dull routine of her convent life, she gladly accedes to his proposals, and the day is set for their wedding.

But, unfortunately, the old love is still strong upon him. He is assured that Ethelinda still lives; that he has nothing more to fear from the machinations of an all-powerful rival, and he is animated by a new-born hope that she may yet be his. These reflections, and the overpowering desire awakened by them, gain at length such complete mastery over him that upon the night preceding the day fixed for his marriage he mysteriously disappears, to the surprise and consternation of his followers and the grief and chagrin of the deceived and abandoned Elfrida, who, rather than return again to her convent, accepts shortly after the offer of the next highest in command, and thus consoles herself for the loss of her treacherous lover.

The next chapters give an account of what befell the lover of Ethelinda from the time of his desertion of the banditti and the hapless Elfrida to that of his arrival at the old Hall of Broadlands. He performs prodigies of valor, rescuing numerous distressed damsels from perilous situations; liberating captive maidens from enchanted castles, where they have been kept in confinement by wicked one-eyed ogres and ferocious three-headed giants and other chimerical monsters; encounters and puts to flight with his single arm numberless bands of robbers who assail him in lonely and gloomy forests; slays two or three dragons which vomit out at him fire, smoke, and brimstone; and, finally, saves a forlorn and beautiful damsel from the hands of an abhorred lover, who is carrying her off, by deftly cutting him in two with a single stroke of his sword. Her beauty and distress having first awakened his sympathy and compassion, he is soon sensible of a still warmer emotion arising within him, and pity yielding the supremacy to love, he becomes hopelessly enamored of her. But he thinks of Ethelinda, and endeavors to suppress his newly-awakened passion for the beautiful Ermingarde. But, unfortunately, she reciprocates his love, and declares with fervent and grateful lips and tears in her soft blue eyes that she will never leave her valiant and handsome deliverer. His various exploits prove him to be, indeed, a veritable second Amadis de Gaul, Orontes, or Palmerin, and like the true knights-errant which they were, he is still faithful to his one, peerless dulcinea; and this resolution, he fears, if persisted in, may necessitate some awkward explanations, and lead to yet more disagreeable complications when he

meets his mistress accompanied by this beautiful stranger. He therefore tells her that she must don the habit of a page, assigning another reason than the true one; which she immediately proceeds to do,—though as to whence the garb comes or by whom provided the reader is not enlightened,—and so they travel on towards England, where they arrive without molestation or further adventure three weeks after. For most of which foregoing particulars Hilton was indebted to an old romance of chivalry.

On reaching the Hall the lover—whose name, by the way, happens to be Sir Percy Wyndham—is horrified by the intelligence that the baron was, about a year before, found foully murdered in his bed one morning. His head had been cut off, the rest of his body dismembered, and the various limbs laid out upon the bed with all the neatness and dexterity of some accomplished Jack the Ripper of the seventeenth century. Ethelinda, despairing of ever again beholding the lover of her youth, had become the wife of a certain old Lord Merrivale,—Hilton had inadvertently written it Melville, but Levison's criticism had enabled him to make the correction,—and upon seeing Sir Percy faints away in his arms just as her husband enters the room. Rage and astonishment at witnessing so unlooked-for a spectacle takes full possession of him. He storms, swears, and demands an instant explanation all in one breath. Sir Percy, equal to the emergency, declares himself to be her long-lost brother. He gracefully accepts the explanation, apologizes for the rudeness of his behavior, shakes the young man cordially by the hand, and welcomes him back to England. But alas for the fickleness of woman! Ethelinda, at first charmed by the youthful grace and beauty of her lover's page, who is her master's almost constant attendant, soon falls desperately in love with Ermingarde. Not failing to notice Ethelinda's somewhat changed manner towards him and the apparent abatement in the warmth of her love, and discovering, moreover, that she has lost much of her early beauty, Sir Percy begins to cool off himself. The inevitable consequence follows. He soon transfers all his affections to his page, and arranges for a secret marriage with her, not a little rejoiced, indeed, at the turn which affairs have taken. And here—with the prospect of still greater complications in sight—Hilton ended his reading.

Louise thanked him; said she had found his story extremely amusing, and that as a literary mosaic it was certainly without a rival.

"Literary mosaic?" What covert insinuation might she design to convey by those words? Could she more than half suspect the truth? And "extremely amusing." He had intended his story to be more than merely amusing; to make it exciting, thrilling; an excitant to the higher and nobler emotions. And now to hear it spoken of as if it had been a purely humorous work,—it was not a little discouraging, certainly. But he screwed up enough courage to say, "And now,

Louise, judging from what you have heard read of the story, do you feel competent to express an opinion, and tell me how you think it will strike the public? I desire your candid opinion."

With inward fear and trembling he awaited her reply; but as she remained silent several moments—which he was quick to construe as a somewhat unfavorable omen—he added, hastily, "But, Louise, perhaps you would prefer to hear it all before expressing an opinion. And I think myself that would be best."

Poor Hilton! in his gloomy foreboding his feelings were not altogether unlike those which a condemned criminal might be supposed to experience when pleading for a brief stay in the execution of his sentence.

"I will act upon the suggestion," replied Louise, whose keen sense of the ludicrous had been stimulated to an unwonted degree, and who had really found no little enjoyment in its secret gratification. "You may leave the manuscript, and to-morrow you shall have the candid opinion that you desire." And with this promise Hilton shortly after took his leave.

The next evening but one—an unforeseen detention had prevented his earlier appearance—he took his way with throbbing heart and mingled emotions of hope and apprehension to the home of his beloved. She received him in the library with all that graciousness of manner which she knew so well how to assume upon occasions, and which had the effect of brightening Hilton up a little, though he could not resist the feeling that if the issue of his suit was to be determined by the fate of his story, he had little if anything to hope for.

But he put a brave face on the matter; assumed a cheerful and even gay air, exchanged a number of pleasantries with Louise, and then asked her, in a jocular manner, if she was ready to pass judgment upon him; though the poor fellow, if he had actually seen transcribed over her door Dante's famous lines above the portal of the Inferno, could scarcely have felt more secret trepidation and misgiving.

"Yes," she replied; "I have read your story through, and will now, as you have requested, give you my candid opinion of it. In the first place, it is painfully lacking in coherence and originality; two very serious, if not fatal, defects in any work of fiction. But to be more definite,"—her manner was becoming severe and her tone icy,—"the situations are in the main forced, most of the characters are grotesquely unnatural; the language extremely stilted, and frequently disconnected and irrelevant,—you seem, in fact, to have borrowed isolated phrases or expressions from different sources and put them into the mouths of your own characters without regard to the proprieties of time, place, or occasion; some of which, indeed, have a very familiar sound to me. You often become so hopelessly entangled in the intricacies of you plot—which in some instances seem to have not the remotest connec-

tion with or relation to each other—that you mix up characters, events, times, and places in utterly confusing and inextricable complications. Need I say more? No, Jack,—stick to the army. You will never make an author."

Poor Hilton! the airy fabric of his hopes and dreams had dissolved; shattered at one blow. And by the hand of her who had been its inspiration.

By a strong effort, however, he rallied himself, laughed, admitted the undoubted soundness of Louise's judgment, thanked her for her entire impartiality, and then carelessly remarked that he had, after all, only indulged in composition as a means of whiling away the time which might otherwise have hung heavily on his hands; that his having spoken to her about publishing it was, of course, a mere joke, as she must so have understood it, for he didn't suppose she thought him bereft of all sense. In short, he spoke and acted in a way which would convey the idea that he considered the whole thing merely as a temporary diversion, and of no real importance whatever.

Louise smiled, but made no pointed comment in reply, merely observing, "I hope, Jack, you don't think me too severe. I only gave you, you know, what you asked for."

"I am glad it amused you, however, Louise," said Hilton; "I have that satisfaction, at all events."

He soon turned the subject,—that of literature seeming for the moment to have somewhow lost its charm for him,—and after conversing with her awhile upon different matters, he bid her good-night.

The following morning Levison called upon his friend, and found him in his room, seated at a table which was strewn with books and loose sheets of writing-paper; the materials which had served his purpose and now become useless. His visage was solemn and his air grave. There was, indeed, an absent, far-away look in his eyes, as if he were entirely unconscious of his immediate surroundings; and it seemed to require not a little effort for him to realize the fact that his most esteemed friend and trusted confidant, Charlie Levison, was standing before him, regarding him with a half-amused and half-sympathetic expression. He needed not to ask the question that was uppermost on his lips, for he read the answer in his friend's manner and looks.

"Well, old boy, where's your story?" he said, slapping him on the back to rouse him. He did not want to come to the direct question too abruptly; he would approach it by degrees.

"In the fire; or as much of it as isn't yet consumed is," replied Hilton, grimly. "The fact is, Charlie, I have made a confounded fool of myself; and that's all about it."

"Oh, pshaw!" exclaimed Levison, with a laugh, "you'll get over

it. Try a poem next time. You may be more successful, and have fairer sailing on that tack. But wake up, old fellow, and tell me all about it. You're not going to withhold your confidence from me now, after having excited my curiosity thus far?"

"That's only fair, I suppose; but please excuse me now, Charlie; some other time."

"Well, Jack, you know faint heart never won fair lady yet. Take my advice: try a new tack, and trust to luck. But why don't you come to the point at once, without beating about the bush so?"

"I may take your advice," replied Hilton, "and try a new tack."

"The best tack for you, my boy," laughed Levison, "would be to tack-le her thus: My adorable Louise, will you accept of the hand and heart of your loving and devoted slave, Lieutenant John Randolph Hilton? A little formal, perhaps, but to the point."

"I could never survive the mortification of a refusal," said Hilton. "But I will think over what you have said,—and in the mean while, Charlie, here is my—promissory note for a hundred dollars, payable when I shall happen to be in possession of the requisite amount of funds."

T. H. FARNHAM.

GREAT BRITAIN AS A SEA-POWER.[1]

THE gross cost of defending the British Empire, to the British tax-payer, amounted, for the year 1892–93, to over thirty-five and a half millions of pounds, twenty and a half millions of which (in round numbers) were devoted to expenditure on the army, and fifteen millions to expenditure on the navy. The estimates for these two great services are passed through Parliament year after year with some slight criticism on points of detail. It is a cogent argument in favor of the policy of such measures as the Naval Defense Act, that it compels Parliament from time to time to consider broadly the requirements of the country for the purposes of defense. On ordinary occasions few of those who are responsible for granting these enormous sums of money, fewer still among the general body of tax-payers, have paused to consider whether we are proceeding on the right principles in allocating the expenditure. It is true that there is a general feeling that for the twenty millions spent on the army, the most efficient part of which is in India, and is paid for by the Indian tax-payer, the nation by no means gets its money's worth. Lord Hartington's commission, composed though it was of able men, and after conducting an exhaustive inquiry into the whole subject, was able to suggest little in the way of reform. Sir George Chesney, Mr. Arnold Forster, and "Vetus" in the *Times*, could only point out defects of administration. One writer who has gone to the root of the matter has shown that, until the British people and British statesmen make up their minds as to the part they expect the army to play in the defense of the empire, our military expenditure is likely to continue wasteful and misdirected.

There are three forms of attack which we must be prepared to meet in the event of war with a first-class European power: attacks on commerce, attacks on colonies and dependencies, invasion.

In former wars in which we have been engaged our commerce, though suffering heavy losses, steadily increased in volume. In any war of the future no one can doubt that our commerce will be much exposed to attack. The British Empire, according to Lloyd's Register, possesses, at the present time, more than half the total merchant ton-

[1] Reprinted from the London *Nineteenth Century* by permission of the Leonard Scott Company, the American publishers of the *Nineteenth Century*.

nage of the world. Nearly two-thirds of the tonnage of steamships, which are generally considered to possess three times the carrying efficiency of sailing-ships, are owned in the British Empire. Turning from shipping to cargoes, the total trade of the British Empire in 1890 amounted to nearly twelve hundred million pounds, seven hundred and fifty million pounds representing the share of the United Kingdom alone. The trade of the United Kingdom is of vital importance. One hundred years ago England was nearly, if not quite, self-supporting. To-day we are not provisioned for more than six weeks or two months.

The young school of naval officers, led by Admiral Aube, has laid it down that the naval force of France when employed for offensive purposes should be concentrated on the attack of British commerce. Admiral de la Reveillère, in a recent article in the *Marine Française*, observes: "La Jeune École se trompe assurément sur la portée de ce genre de lutte quand elle s'imagine, avec quelques torpilleurs dans la Manche et quelques croiseurs très rapides, condamner l'Angleterre à périr d'inanition; mais ce n'en est point moins le vrai moyen de combattre." In adopting the "guerre de course" as the be-all and end-all of their policy, the naval strategists of the Jeune École hardly pay sufficient regard to the teachings of history. The whole maritime energies of the French Republic after the battle of the 1st of June in 1794, and of the French Empire after the battle of Trafalgar, were directed to the subjugation of England through the destruction of her commerce. The command of the sea was not disputed. British fleets and British cruisers were, if possible, to be avoided. The first principle of naval warfare was sacrificed to an ulterior object. Captain Mahan, in his recent work, has conclusively shown that, in thus acting, the French Government singularly failed to attain the object which they had in view. British commerce, indeed, suffered numerous losses at the hands of French ships and French privateers throughout the war, but its steady ebb and flow was never seriously affected by these means. The number of British merchant vessels captured during the twenty-one years 1793–1814 amounted to eleven thousand; the average number of ships entering and clearing the ports of Great Britain, exclusive of the coasting trade, amounted annually to over twenty-one thousand. From these and other considerations Captain Mahan draws the conclusion "that the direct loss to the nation by the operation of hostile cruisers did not exceed two and a half per cent. of the commerce of the Empire; and that this loss was partially made good by the prize ships and merchandise taken by its own naval vessels and privateers." It should be further observed that the total number of vessels belonging to the British Empire rose from sixteen thousand eight hundred and seventy-five in 1795 to twenty-two thousand and fifty-one in 1805 and twenty-three thousand seven hundred and three in 1810. What

was the result of the war to our opponent? Before the Revolution, Admiral de la Reveillère asserts that the foreign commerce of France equaled that of England. The revolutionary war had not been long in progress before the French Directory was constrained to admit (in 1799) that "not a single merchant-ship is on the sea carrying the French flag." The history of the great war established beyond contravention the principle that no serious interruption to commerce is possible by the naval forces of a power which has not first obtained the command of the sea. It illustrates the fallacy of the idea that England can be reduced to scarcity while the relative strength of the two navies remains as it is now. On this point Admiral de la Reveillère is again worth quoting: "S'imaginer que nous pourrons suffisamment bloquer les côtes anglaises pour reduire le pays à la famine. . . est une idée qui ne pénétrera jamais dans une tête saine." In any future war in which the British Empire may become involved, British commerce will undoubtedly suffer losses; their number and extent will depend on the strength and efficiency of the British navy; but it is only in the case of that strength being allowed to fall to a point which will leave the command of the sea in doubt that British commerce can be seriously interrupted. In such a case it is idle for British merchants to talk of securing the safety of their trade under a neutral flag. No power with which we might be at war would respect the neutral flag where ships were carrying food supplies absolutely vital to the existence of the enemy. Place the command of the sea in doubt, and the ruin of British commerce and the British Empire is assured.

Of all the colonies and dependencies of the British Empire, India and Canada alone are open to serious attack by land. Though the navy is powerless to prevent these two great British possessions from being attacked, the power to defend them depends absolutely on the command of the sea. In the event of war with Russia we can place re-enforcements to our army on the northwest frontier of India far more easily, far more cheaply, and probably more expeditiously than the Russians can bring forward their invading forces. Deprived of the power of re-enforcing the army in India by sea, England's hold upon India is gone forever. The contingency of war with the United States no Englishman cares to contemplate. Should Canada be ever again liable to invasion, our power of defending Canadian soil depends, as in the case of India, on the power of transporting British troops by sea. Canada is defended from the attack of any other power but the United States; Australasia and South Africa are secure from the attack of every power, by the fact that they are of large extent and occupied by a numerous and friendly population. An army of fifty thousand men would be required to conquer and hold either of these great colonies or dependencies. Such a force cannot be transported across the ocean

by surprise. To make the attempt while the command of the sea was in doubt would be madness.

Canada, Australia, South Africa, and, we may add, India are by many considered liable to serious attack by hostile navies, which would assail their ports and prey on the shipping on their coasts. Halifax is the only port in these colonies which can possibly be considered within the radius of action of fleets in European waters. The ports of the Cape Colony, of India, of Australia and New Zealand, possess an important element of safety from attack in their distance from Europe. The bases of the enemy in their neighborhood are few. The naval force maintained by foreign powers in the eastern seas, whether in the Indian Ocean, in the China Sea, or the Pacific, is quite insignificant compared with that maintained by the British Empire. It is clear that no power could withdraw a fleet of ironclads for operations in distant seas without abandoning to us the absolute command of European waters and without setting free a proportionate number of British battle-ships. Attacks on commerce by one or two cruisers, keeping generally out of sight of the coasts, are the most probable form which the operations of an enemy would take on the coasts of India, Australia, or South Africa. Occasional raids on territory might be made with the object of obtaining supplies; but it may be safely asserted that few captains of cruisers would waste ammunition on bombardment with the chance of falling in with an enemy's cruiser before they could return to their base to obtain a fresh supply. Against attacks on commerce the best form of defense is an active naval defense, by ships which are able to pursue and fight the cruisers of the enemy wherever they may be found. In accepting the localization of the vessels of the special Australian squadron, in deference to the wish of the colonies, we have acted on a principle unanimously condemned by students of naval strategy and seriously hampered their utility. The naval defense of Australasia and Australasian commerce is amply provided for. A few guns to deny the ports to the cruisers of the enemy are all that is required on shore. Unfortunately, at Melbourne large sums of money have been spent on providing a defense sufficient to keep a fleet of armor-clads at bay. In other words, Melbourne is defended against an attack which it is inconceivable could be made upon it under present conditions.

Our minor possessions divide themselves into colonies and coaling stations. The former have no local defenses; they depend for their immunity from attack on the power of the British navy. The latter have been lately provided with modern defenses in accordance with the recommendations of Lord Carnarvon's commission. Our most important coaling stations are on the routes to the East, on that *via* the Suez Canal, Gibraltar, Malta, Aden, Ceylon, Singapore, Hongkong; on that *via* the Cape of Good Hope, Sierra Leone, Ascension, St.

Helena, Cape Town, Simon's Bay, and Mauritius. In the West Indies we have Port Castries (St. Lucia) and Port Royal (Jamaica); in the North Atlantic we have Bermuda; in the South Atlantic we have the Falkland Islands—an important station as yet undefended. Of all our coaling stations, Gibraltar and Malta alone can be considered open to attack by a powerful fleet, and against such an attack they must be defended. The Strait of Gibraltar is by far the most important strategic point in the British Empire. Gibraltar is insecure and inconvenient in many respects as a port, but for want of a better in the immediate neighborhood it is the base on which must rest that British fleet on which the main burden of the defense of the Empire will fall. It must also be the base for the cruisers protecting our trade with the East, whether by the Cape of Good Hope or the Suez Canal, and the trade with South America. While the strategic importance of Gibraltar is absolute, that of Malta is only relative. It is a convenient base for operations in the Eastern Mediterranean, and for protecting the Mediterranean trade. After Gibraltar, the Cape of Good Hope is the most important strategic point in the British Empire. Some, indeed, would place it first. As a base for cruisers protecting trade this may be true; but, while Gibraltar has very great importance in this respect, as an indispensable base for our fleets it is without a rival. The strategic importance of our other coaling stations as protecting one or other of our trade routes is sufficiently obvious. Of those the defenses of which have not yet been undertaken, it may be observed that Esquimalt is of little value except for the deposits of coal at Nanaimo, and for the fact that it secures the Pacific end of the great Canadian line of communication against attack from any other power but the United States. Esquimalt is ill situated for protecting British trade with the west coast of America; and Canadian trade with China and Japan, though growing, is as yet of slight importance. It is clearly a position which, if worth defending at all, should be defended almost entirely at the cost of the Colonial government. The Falkland Islands are the only base from which protection can be afforded by our cruisers to the homeward-bound trade from Australia and to the important trade with the west coast of America.

Most of our coaling stations proper are islands, and Aden and Sierra Leone are practically cut off from the rest of the world except by sea. Gibraltar is the single exception, and it is only in the improbable contingency of war with Spain that Gibraltar can be considered as anything but an island. The power to hold our coaling stations, therefore, depends absolutely on the possession of the command of the sea. In the wars of the French Revolution and Empire we were long, far too long, before we bent our energies to the task; but by 1812 the colonies of France, of Holland, and Denmark had fallen before the British arms. Issuing from the Isle de France and the French West

Indies, French privateers had done considerable harm to British commerce. They were opposed with energy by our cruisers, but it is difficult to understand why the attempt was not made earlier to capture these important hostile positions.

Bases for ships operating at a distance from the mother country are far more necessary than before the introduction of steam. Sailing-ships could, and did, remain at sea for many months at a time. Their power to remain at sea was only limited by the amount of water that they carried. The period during which a modern ship of war can remain at sea is determined mainly by her coal endurance; and, to a great extent, by the necessity of effecting repairs in port to delicate machinery. The coal endurance of modern ships of war is even more limited than official figures, so far as any are available, lead us to suppose; and when Lord Salisbury placed the limit of the striking distance of a ship of war at two thousand miles—viz., the distance at which she could deliver a blow and return to her port—he certainly did not underestimate her powers. The country which possesses the most numerous coaling stations and the best situated as regards trade routes will have a great advantage in a future war. In this respect the British Empire is without a rival.

While a navy depends for its power of operating in distant waters very largely on coaling stations, the existence of the latter depends absolutely on the power of the fleet to protect them. No local defense, whether in fortifications or men, will preserve them to a power which has lost the command of the sea. The history of Malta during the great war affords an admirable instance of the interdependence of fleets and coaling stations, though it must be admitted that the lesson to be drawn is to some extent weakened by the need of modern ships for coal. Many people consider that the possession of Malta is indispensable to the maintenance of British influence in the Mediterranean. How far this is true may be judged from the fact that Nelson won the battle of the Nile when Malta was in the hands of the French, and that Malta fell into our hands, though not for some time, as the direct consequence of that battle which gave us the command of the Mediterranean. Captain Mahan summarizes the conclusions which should be drawn in these words: "Its fate, when in the hands of France . . ., gives warning that the fleet depends less upon Malta than Malta on the fleet." If this be true of Malta, it is still more true of other coaling stations which do not lie in such proximity to the ports of foreign countries. We have acted wisely in giving to our coaling stations sufficient defense against one or two hostile cruisers. More than this is not required. As long as our navy is maintained at its proper strength, and is efficiently officered and manned, it should not be possible for a serious expedition to leave the enemy's port without a British fleet being immediately in pursuit.

The local defenses of the coaling stations throughout the empire are in the hands of the army—a policy which is not adopted by other nations. To this system many object on the grounds (1) that their defense more properly belongs to the sphere of the navy; (2) that the navy possesses in our magnificent Marine Corps a force which is far better adapted to the garrisoning of isolated and distant coaling stations than a short-service army. It is urged, and urged with force, that it must be absolutely destructive of the efficiency of a regiment to place three companies in garrison at Mauritius, one company at St. Helena, and the remaining companies at Cape Town—roughly two thousand miles away from either of the detachments. The principal objections to a change come from naval officers themselves, who consider that, if responsible for the defense of coaling stations or coasts, they would be tempted to keep their ships in the neighborhood of their ports, instead of pursuing the enemy wherever he might be found, and making, as we have done in past years, our frontier line our enemy's coast. Though much money may be wasted under our present system in providing defenses, whether forts or submarine mines, which the circumstances do not require, the naval objection to a change of system must be admitted to be of great force.

If, for the protection of our commerce, our colonies, and coaling stations, we depend in great measure on the navy, still more do we do so for protection against invasion. The ideas put forward by the author of "The Battle of Dorking," to a large extent, prevail. Our military authorities have, in the last few years, elaborated a system of defense for the metropolis; large sums of money have been lavished on forts intended to protect Chatham, Portsmouth, etc., from the attack of an invading army. It is surely better to prevent an enemy from landing than to take elaborate and costly measures to meet him after he has landed. "Aucune personne de bon sens ne songera à nous voir assez maîtres de la Manche pour opérer un débarquement et pour ravitailler une armée débarquée." So says Admiral de la Reveillère in the article already quoted. In England it has been generally the practice of late years to estimate the probabilities of invasion in defiance of the lessons of our history. Two hundred years ago Lord Torrington demonstrated the value of the "Fleet in being" as an absolute protection against invasion, as has been so well pointed out by Admiral Colomb. For nearly two years Napoleon lay encamped on the heights above Boulogne with over one hundred and thirty thousand of the flower of his army, waiting for that opportunity which never came; and it must be remembered that Napoleon had one chance of success which cannot occur again. The boats and vessels in which the invading army was to be embarked could be propelled by means of oars; the British ships which were to destroy them were mainly dependent on the wind. In a calm it was possible for the Boulogne

flotilla to have moved without the British ships being able to reach them. Such a chance of success is not possible in these days of steam.

In the fine passage with which he opens his account of the history of these two years Captain Mahan points out how the British fleets, which, by Lord St. Vincent's strategy, were continually maintained before Brest, Rochefort, Ferrol, and Toulon, were the real obstacles to the army of invasion. Our greatest naval victory won by our greatest naval hero was merely an incident in that well-planned campaign. The battle of Trafalgar was not necessary to prevent England being invaded, but it did render the prospect of invading England hopeless. As it was then, so it will be again to-day. In the event of war with France —and France is the only power whose fleet gives her the least prospect of being able to invade Great Britain—our protection against invasion will not consist in forts on the English coast, however well manned, and however well armed. By far the finest portion of the French Navy is now in the Mediterranean. The force maintained in the ports on the Atlantic and the Channel is comparatively insignificant. Our energies will be devoted to keeping the Mediterranean squadron in port; and if, as many naval authorities now hold, a blockade is no longer possible, we must bar the passage into the ocean through the Strait of Gibraltar. As in the day of Napoleon, so now, we shall hold the interior position and be able to combine our fleets at will. Our defense against invasion will rest primarily with the Mediterranean fleet. If that fleet is defeated in battle, and such a contingency has to be contemplated, it will not be defeated without inflicting serious damage on its opponents. To provide against such a contingency the navy must be of sufficient strength in battle-ships to admit of a reserve squadron being maintained, capable of meeting the French Mediterranean fleet after it has been in conflict with our own. "No amount of foresight or calculation," Lord George Hamilton has said, "can anticipate naval combinations and naval movements; therefore, it seems to me essential that, for the purpose of meeting such unexpected blows, we should have a considerable margin of reserve."

There is one form of attack which does not fall under any of the three heads under which we have been considering the principles of imperial defense. The British naval manœuvres of the last three years have shown (1) that the English shores of the Channel are well within the range of torpedo-boat attack from the stations which have been recently established from Dunkirk to Brest; (2) that the mere menace of torpedo-boat attack is sufficient to seriously retard the junction of two powerful fleets. In view of our recent experience, it is probably true to say that the principal danger we have to fear in the event of war with France is an attack by torpedo-boats on our assembling fleets at Plymouth, Portland, or Spithead—similar to that made by Captain Barry's flotilla on Sir George Tryon's fleet in Plymouth

Sound in the manœuvres of 1890. An offensive defense, it was clearly shown by the manœuvres of 1891, is the best way of meeting such an attack. We must have numerous "torpedo-boat destroyers," fast enough to catch and powerful enough to destroy the torpedo-boats of the enemy. We may congratulate ourselves that a first step has already been taken in this sound line of policy. More than this is required by the circumstances of the case. The anchorages at our Channel naval ports sorely need additional protection, by means of breakwaters, against an attack to which they are at present so much exposed.

The principles of imperial defense may be summarized by considering what our objective is to be in time of war. Our first and principal object is obviously to defeat the enemy's main fleet in battle or to completely checkmate its operations. An effective army, powerful fortifications, superiority in cruisers, will not compensate for a deficiency in the line of battle. Battleships alone can give us that command of the sea which is indispensable alike to the safety of our commerce, our colonies and dependencies, and the shores of the United Kingdom. Our secondary object must be to maintain a sufficient force of cruisers to deal either with hostile cruisers designed to prey upon our commerce, or with expeditions intended for the attack of colonies, which might escape our principal fleets. It is a sounder and cheaper policy to endeavor to deal with these at the point of departure than to provide elaborate defenses to meet them on arrival at their destination. The cruisers defend not only the point to be attacked, but they also secure the integrity of the trade routes over the ocean. Our third object should be to capture the coaling stations and colonies of the enemy which are indispensable to his depredations on our commerce. This is an object, as has already been stated, to which the attention of those responsible for directing the forces of Great Britain, in the great war, were not early enough directed. How many millions of pounds would have been saved if we had earlier seized Mauritius, Martinique, and Guadeloupe! In this connection Captain Mahan points out that, contrary to the general principles of strategy, whether military or naval, for a power which has command of the sea, dissemination of force within reasonable limits is advisable. Convenient harbors for coaling, etc., in all parts of the world, are indispensable to attacks on a commerce so widely distributed as that of the British Empire. Deprive the enemy of these, and his attacks on commerce are to a great extent rendered impossible; but without some dissemination of force such a policy cannot be carried out.

Mr. Shaw Lefevre said in the House of Commons on the 7th of May, 1889,—

"France has greatly increased her empire, not only in China and Tonquin, but in Africa, and has extended her interests in other parts of the world; and in the event of a war with this country all these

interests would be jeopardized, and in a very short time France would be cut off from communication with all her outlying dependencies in different parts of the world."

When we hear that the French have occupied the Kerguelen Islands, St. Paul and Amsterdam—which, by the way, are marked as British possessions in most English maps—or that the United States contemplates the annexation of the Sandwich Islands, it should not give us dissatisfaction. Such acquisitions only increase the vulnerability of states whom we are practically powerless to injure in their own territory.

In view of the military forces now maintained by continental powers under a system of conscription, extended operations on the Continent are no longer conceivable. The part which the British Army can play in a war with a first-class power is only a secondary one, except in the cases of war with Russia or the United States. Though secondary, it is still important. The army has not only to defend our own coaling stations; it will have to co-operate with the navy in the capture of the colonies and coaling stations of the enemy. The capture of St. Pierre and Miquelon, of Diego Suarez or New Caledonia, would not, perhaps, be great achievements for the British Army, but the conquest of Algeria would test its powers to the utmost. With Algeria hostile in time of war, the trade route up the Mediterranean could never be absolutely secure, and it might be advisable to abandon it altogether. For the Eastern trade this would only mean serious inconvenience. For the trade with the Mediterranean and Levant it would mean absolute extinction for the time—and British trade with the Mediterranean bears a large proportion to the total trade of the country.

To those who have studied and grasped the principles of warfare which are applicable to a sea power like Great Britain—principles which we have to thank Captain Mahan for so clearly setting forth—the relative proportions of naval and military expenditure in the British Empire appear strange indeed. If these proportions were reversed, the British Empire would be infinitely better defended than it is at present. For our naval expenditure we obtain a navy powerful indeed, but by no means sufficient for our needs. For our military expenditure we are able to provide the defenses and garrisons of our coaling stations, we have a home army from which we hope to be able to reinforce the army in India in case of need, but which is in any case most costly, yet insufficient in numbers to undertake offensive defense.

T. A. Brassey.

THE EPIDEMIC OF MILITARISM IN EUROPE.

THE epidemic of militarism which has seized on Europe represents a condition of things for which the average progressive American feels a sort of pity mingled with contempt. It seems to him unnecessary and wasteful to an alarming degree. The great continental dynasties are mainly responsible for the extraordinary growth in modern armaments under which the continent has been converted into an armed camp. It is a condition of things which, even if necessary, has inflicted much suffering on humanity, and which threatens to be enforced with still greater severity if the unwearying competition of the great powers proceeds.

The land and naval forces of European nations at the present writing number thirty-one million nine thousand eight hundred and sixty men, or more than one man for every male person in the United States. In the last ten years the cost of European armaments has increased by twenty-five per cent., and is estimated at three per cent. of the earnings of Europe. Strange as it may seem, the excessive armament of Europe, which is on a scale which shakes national credits, is a material force tending to peace. The increasing cost of armaments and their destructive character will before long render them intolerable. Of late years science has eliminated from war those qualities of personal heroism which rendered it attractive, and has converted it into mechanical means for slaughter and destruction. Every nation now shrinks from war, for no one can tell what will be its results either on land or sea.

The great powers are vying with each other in their endeavors to so perfect their war accoutrements as to make a conflict as terrible as possible. They begin with armor to resist existing guns, fulminates, and projectiles. After a while they reach the point where the armor is impenetrable. Then they go to work on the other side of the question, and occupy themselves with the production of guns which will send newly-devised projectiles right into the heart of the impenetrable armor. Having accomplished this they return to the improvement of the armor, and so go on from one decade to another.

M. Tupin, the inventor of melinite, has recently perfected a new gun which he declares will belch forth one hundred thousand projectiles an hour with such force that no fort or ironclad can withstand it. Every invention of this kind only brings the day nearer when war must be displaced by international arbitration, for the perfection of arms will of necessity compel all nations to avoid coming into conflict with each other.

A distinguished officer in the United States navy recently declared that the "modern appliances of war have become so destructive that no nation will risk a contest for the sake of any cause or upon any provocation." Commenting on this remark one of the leading dailies asks, "If this be the case, why should the youth and energy of nations be withdrawn from productive employment and drilled, disciplined, and maintained under arms at oppressive cost to the people?"

The answer to this question will doubtless be, "If you wish for peace you must be prepared for war." This may be true when a nation is surrounded by uncivilized tribes. It is not true, however, when nations do not desire war, which is often forced upon them by the magnitude of standing armies,—a constant menace to peace. Extensive armaments are a condition of war and are opposed to the continuance of peace. A machine is not made to stand idle; it rusts if it is not used.

CHARLES ROBINSON.

AMONG OUR CONTEMPORARIES.

THE very quaint print of the Boston Massacre, "engraved, printed, and sold by Paul Revere," has been reproduced more than once, and many persons have a copy. Most people have what they think to be the original print. The writer has one carefully framed, which, while he is sure it is not one of the originals, is enough like them to impose upon all but connoisseurs in such matters.

Over the print is the legend, "The bloody MASSACRE perpetrated in King Street, BOSTON, on March 5th, 1770, by a party of the 29th Regiment." Underneath the engraving, which shows the firing party, with perfect wooden heads like a tobacconist's figure, firing upon the citizens, who exhibit entire indifference for the most part (if we can judge from the expression) to this point-blank and destructive volley, which killed five and wounded six,—two mortally. A small dog stands between the file of soldiers and their victims in an entirely unconcerned way, as if Tower muskets fired close over him was an every-day occurrence. The young moon, rising over the roofs to the left of the old State House, indicates the time of the tragedy. The smoke of the evening fires rises against the sky. Underneath the print is engraved a copy of verses, perhaps by Revere himself, beginning,—

> "Unhappy BOSTON! see thy Sons deplore,
> Thy hallowed Walks besmear'd with guiltless Gore,"

and ending,—

> "Keen Execrations on this Plate inscrib'd,
> Shall reach a JUDGE who never can be brib'd."

We looked with renewed interest at the artless, but striking and effective broadside (for it is really nothing more), upon reading, in the *Atlantic Monthly*, Mr. Paul Leicester Ford's paper entitled "Some Pelham-Copley Letters." These letters have been lately "stumbled upon," to use the writer's expressive language, in the English Public Record Office, a mine only partially exploited in regard to the history of the eighteenth century. There are, we are told, thousands of bundles and volumes under the somewhat vague title of "America and the West Indies. 449. Intercepted Letters." Mr. Ford prints a letter

of H. Pelham (who was a half-brother of John Singleton Copley, and a miniaturist and engraver), under date of March 29, 1770, in which he accuses Paul Revere of having stolen his (Pelham's) idea of publishing a print of the massacre, and leaves him "to reflect upon and consider of one of the most dishonorable Actions you could well be guilty of." Whatever may have been the merits of the question, Paul Revere certainly had the best of it in the end, for his curious production survives, while "Pelham's, though unknown, was certainly completed and printed," as Mr. Ford tells. It would be interesting to have a copy turn up, as is not impossible in these days of research, so that we might compare them.

Pelham, a Royalist, but out of employment by reason of the Revolution, writes to his family letters curiously illustrative of the feeling in Revolutionary times in New England. After the battle of Bunker's Hill he was employed by General Howe and General Gage to make a survey of the burnt Charlestown, "under thy command a Sargant and two men," to do the laborious part of the measuring. "This Plan," he says, "when finished will give a good Idea of the late battles & I propose sending Home a Copy to be engraved together with a View of it as it appears in its present Ruins with the encampment on the Hills behind it. I have often Passed Doct. Warren's grave. It is disagreeable thus to see a Townsman, an old Acquaintance led by unbounded Ambition to an untimely death and thus early to realise that Ruin which a lust of Power & Dominion has brought upon himself & partly through his means upon this unhappy Country. I would wish to forget his principles to Lament his Fate. I almost forgot to tell you that M^r^. T. Mifflin of Philadel'a is aid de Camp to Genl. Lee & that the Continental Congress have taken the entire direction of the War, have erected themselves into an Independent body, are address'd by the title of Excellenceys & call themselfs the states General of the united american provinces, and their Army the grand Confederate Army. They have appointed M^r^. Washington of Virginia, Lieutenant Gen^l^ and Ward Putnam and Lee Major Genls. They are all now at Cambridge. They have been very industrious in constructing fortifications all round this Town, & it is said as far back as Worcester. What the Result of this Contest will be God only knows."

In the early summer there passed away, in his ninety-third year, Joseph Francis, whose life-saving inventions have been well known to two generations. In his naval life-boat and his portable boat he preceded the use of iron or steel. About 1840 he began to use iron, inventing a valuable system of corrugating sheet metal of any kind. This he first applied to his life-car for landing wrecked people, and

then to the metallic surf-boat, about 1845. The government refused to adopt his life-cars, and so he made and placed one of them on the portion of the New Jersey coast where wrecks are most frequent at his own expense, feeling sure that, sooner or later, its usefulness would be demonstrated.

In January, 1850, during a terrible storm, the British ship "Ayrshire" was wrecked on Squan Beach. She had two hundred and one souls on board. When other devices for reaching her had failed, a line was thrown across the ship from a mortar, and the life-car sent out. "Back and forth it went on its errand of mercy until all were rescued, the only person lost being a man who persisted in going on the outside of the car containing his relatives, and so was washed off." This very car may be seen at the National Museum at Washington.

From that time Francis had plenty of orders for boats and cars from foreign as well as domestic powers. He also manufactured pontoons, floating docks, etc., which were in use alike on our Western plains and Russian steppes. He also invented the double-joint rowlock, the improvement called by his name in the hydraulic press, and in the course of his very long life took out twenty-five patents.

On visiting Europe he was received with distinguished honors. Russia made him a Knight of St. Stanislaus; Napoleon III., after witnessing an exhibition of his car on the Seine, gave him a valuable gold snuff-box studded with diamonds; medals and diplomas came to him from various European societies. The Congress of the United States, by act of August 27, 1888, gave tardy recognition to Mr. Francis's valuable inventions. A medal of pure gold four inches in diameter and a quarter of an inch thick, exceeding three pounds in troy weight, the metal having seven hundred and sixty dollars intrinsic value, and of beautiful workmanship, estimated to have had a total cost of six thousand dollars, was struck off at the mint in Philadelphia. The token was presented to the old gentleman by President Harrison on April 12, 1890.

Wm. O'Connor Morris, in an article in *Temple Bar* on "Oliver Cromwell as a Soldier," and speaking of Marston Moor, says, "The battle which followed was the first instance in which the tactical powers of Cromwell were seen on anything like a great scale; and the issue was mainly due to him. Rupert (he had advanced carelessly) wished to fall back, or at least not to fight until the next day, when he saw how strong was the hostile position; and tradition records that he eagerly asked, "Where are Cromwell and his men?" (compare the "Où est la division Picton?" of Napoleon before Waterloo,) for England already had begun to ring with the fame of the Ironsides. But he was not given the choice he sought. Cromwell, in command of the

allied left, saw the opportunity and at once closed; he crossed the ditch at the head of his horsemen, and Rupert and his cavaliers, before never conquered, were "but as dust" after a brief struggle, and were driven to the rear in hopeless confusion. By this time the battle had become general; each army was of about equal strength, from seventeen thousand to nineteen thousand men, and the opposing centres were fiercely engaged, each side making most stubborn efforts. A charge, led by Goring from the prince's left, completely overthrew the allied right, and when Sir Charles Lucas, with his squadrons in hand, had fallen in force on the allied centre, the battle seemed all but won for the king. At this crisis Cromwell, like Condé at Rocroy, intervened and changed the whole course of the fight; he had taken care to have a fresh reserve, and, having thoroughly disposed of Rupert, he moved with this body across the field, and fell on Lucas in irresistible strength. The result was such as was often seen in the great battles of the seventeenth century: the Royal left was crushed by this decisive charge; the allied centre, set free, advanced, and the army of Rupert was completely routed! The prince left the field with but six thousand men, and Cromwell was the unquestioned hero of the day. "God," he wrote, in his striking language, enthusiastic and yet soldierly, "made them as stubble to our swords. The left wing, where I commanded being our own horse, saving a few Scots in the rear, beat all the prince's horse. We then charged . . . and routed all we charged. Give glory, all the glory, to God."

Deputy Surgeon-General C. T. Paske, late of the Bengal army, has lately published a "Retrospect of Life and Travel in Lower Burmah" of more than ordinary interest, because the book bears internal evidence of simplicity and truth. The author was in service in the first British occupation of Burmah, in the Sepoy Rebellion, so called, and served long afterwards in the British possessions in India, and of course has seen a good deal of the workings of the British *raj* in those countries.

To us the interest of his commentaries and reflections is chiefly in the naïve way in which he disposes of certain theories in regard to the subjugated lands. He says, for instance, "Comparisons are, as a rule, odious, but the pharisaical suppression of many native Burmese modes of recreation gives rise to reflections that will find expression ere long in the outcry of an injured people. We lay the flattering unction to our souls that we are not as others; *we*, forsooth, forbid the natives to bet and gamble. Why can we not at least have the honesty to admit that we hold India and Burmah solely and entirely for the sake of the 'loaves and fishes,' without descending to cant about our duty as the

pioneers of a religion with which such races can have but little real sympathy, and a civilization that—if, indeed, it be nothing worse—is at least no improvement on their present state?"

Again: "The pages of history furnish us with proofs as abundant as they are sad, that no nation can advance as long as the hand of the conqueror weighs it down; there may be a spasmodic and artificial progress, but in reality the conquered races recede, since there is in the East no possibility of their absorbing and assimilating their conquerors, as did the Greeks and Saxons of old, which is the only chance of their deriving lasting benefit from the victors."

These, with other passages of the like spirit, would not, we should think, be likely to render the philosophical doctor a *persona grata* with the Indian Office.

We are reminded by the foregoing that an American, Dr. I. W. Palmer (a brother of Dr. James C. Palmer, surgeon-general United States navy, who was Farragut's fleet-surgeon at Mobile Bay), was the first writer who gave us a popular book on Burmah, and concerning the English occupation of that country. Dr. Palmer was afterwards well known in literary circles in New York, and was editor of one or more of the monthlies published in that city. His "Burmah" book was published about 1855, and entitled "The Golden Dagon; or, Up and Down the Irrawaddy." The writer remembers meeting him,—a "California pioneer," dropped by a ship and looking out for something to do,—seeking his fortune, as so many young men unfitted for California life were then doing. It must have been in 1851, in Hong-Kong.

The "Phlegethon," a paddle-wheel steamer of the Hon. East India Company's service, a queer old craft, with long smoke-stack and of light draft, had been sent up to dodge about Amoy and the coast in search of the pirates so common then. She had a good deal of sickness on board, as had the English squadron generally; and so it came about that, when her surgeon fell overboard and was drowned, the English admiral had no medical officer to lend her, although she was ordered to Burmah, on the troubles breaking out there, without any delay. The late Dr. Du Barry, then fleet-surgeon of the American squadron in China, happening to be in Hong-Kong and knowing about Palmer, recommended him for the post. He was appointed the same day and sailed the next morning, and a fortnight or so found this roving American on board an English vessel engaged in the subjugation of the Burmese. He had his share of adventure, which he relates very pleasantly in "Up and Down the Irrawaddy."

One day somewhere in February, 1865, the writer, who was attached to the "New Ironsides" (which vessel was then "plugging" the channel

of the James River, just off Bermuda Hundred, to prevent any possibility of the Richmond ironclad flotilla coming down and destroying the immense stores of the Army of the Potomac at City Point), had gone down with others to the quartermaster's office at Eppes's House in regard to certain medical comforts—foremost among which was whisky—only to be had there. To get to the bluff from the wharf one had to pass over narrow planks laid on deep mud, and there was room for only one to pass without great inconvenience. On our return to the boat, after a pleasant and successful interview with that wonderfully able quartermaster's office, we met, in the narrowest part of the plank walk leading along under the bluff to the landing, three or four curious-looking men, clad in rusty black, with pot hats, also rusty, of the fashion of about 1850. They were bound up to Grant's headquarters evidently, and gave one the impression of being a delegation of the Christian Commission, or, possibly, some sutlers in their Sunday clothes. When we came close to each other, going in opposite directions, there was a halt. "Well, who's going off into the mud, you or us?" With a mild and resigned smile the rusty-coated party gave way for the buttons and shoulder-straps, for civilians had no rights in those days which buttons and shoulder-straps were bound to respect. As we passed on and neared the end of the planks an officer of our acquaintance, who was hurrying after the black-coated party, said, "Good God! Do you know who you fellows turned off the walk?" "No. Some delegation of sutlers, perhaps." "Not at all, my dear fellows. That was the Southern Peace Commission."

We were vividly reminded of the occurrence by an article we saw in the *Chattanooga Times* some time ago, which says,—

"One of the best illustrations of Lincoln's forceful manner of enforcing his meaning was told me by an ex-member of the Confederate Congress. At the time Hunter, Campbell, and Ould, as a commission, went to Fort Monroe to have a conference with Lincoln and Seward to see if terms of peace were possible. A. H. Stephens, Vice-President, went also at the request of the commission. Stephens reported what I now refer to, saying that Lincoln's shrewdness of reply by illustration had more force than long and learned speeches could have exerted.

"Lincoln first assured the commission that his and Mr. Seward's meeting and conference with them must not be construed as treating them as a commission from the government of the Confederate States, but only as private individuals, as the fixed policy of the government of the United States had been, and was, not to treat the rebellion as an organized government.

"To this Mr. Hunter replied that it ought to be enough to decline to treat the Confederate States as a government *de jure*, but that it might, for the purposes of this conference, looking to possible terms of peace, be treated as a government *de facto*, and cited the action of

Charles I. as a precedent. Lincoln quickly replied, 'You'll have to talk to Seward about such things as that. All I remember about it was that Charles I. lost his head.'

"Stephens said it would not be possible to conceive of a more complete ending of what might have been a long discussion. After a little delay Mr. Campbell inquired whether, if the Confederate forces laid down their arms and submitted to the authority of the Federal government, the Southern States could be restored to their places in the Union, with rights of individual property unimpaired.

"To this Lincoln replied, 'My proclamation of freedom to slaves must continue in force. Long notice of it was given as a condition of the arms of the rebellion not being laid down. Now the freedom it has given to the slaves must continue.'

"'Well, but Mr. President,' said Mr. Campbell, 'are you aware of the fact that that would mean almost cruel death to the Southern people? The climate is too severe for white men to work, and, not being used to field labor, if now deprived of their slaves, many of them will starve.'

"Lincoln looked thoughtful for a few moments, and then said that it reminded him of a man in Illinois who tried to winter a large stock of hogs on turnips. His fields of turnips were divided into lots, and after one lot was exhausted the hogs were turned into another. The hogs did well until the ground froze deeply. A neighbor came by and passed the man sitting on the fence watching the efforts of the hungry hogs to get at the turnips.

"The neighbor observed, 'Your hogs can't get at those turnips. You'll have to feed them.' 'Well,' said the man, 'that's all I have for them to eat, and it looks to me like a case of "root, hog, or die."'

"Stephens said, 'That most conclusively ended the conference.'"

The old story is stale in regard to the Londoner who met the American and asked him where he came from in the States. "New York," says the Yankee. "Ah! well, then, I dessay, you know my brother: he lives in Alabama." John Bull has got too much money invested here—in mines and land and bonds and what not (beside sending over the worthless of the coming generation to be instructed in agriculture, etc., particularly the et cætera)—not to know our geography a little better. But the French are hopeless. In the first place, to the true Frenchman there is only one country,—France,—and the rest are to him, vaguely, "*la bas.*" The accomplished Paris correspondent of the *Philadelphia Telegraph* not long ago gave us an amusing note on the ignorance prevailing in European countries concerning matters and things in the United States. "My French almanac, for instance, sets

forth as its prominent incident for the 11th of April, that that was the date of the outbreak of the war between 'the States of North America and the States of South America.' But still more astonishing is the advertisement of a life of Admiral Farragut by Messrs. Sampson, Low, Marston & Co., the London publishers, the work being declared to be 'a biography based on family papers of the great *Confederate* admiral.' Probably the publishers thought that the book would prove more popular with English readers if its hero was set down as a Southerner. After that one cannot be much amazed at the statement in the *Figaro*, apropos of the marriage of Miss McClellan, that her father, General George B. McClellan, had been at one time 'commander-in-chief of the Confederate forces during the American Civil War.'"

We may try to comfort the indignant correspondent by saying that it is another instance of French indifference to anything which goes on "*la bas.*"

A little book entitled "From Head-quarters. Odd Tales picked up in the Volunteer Service," has been lately published in Boston. The author, Mr. James Albert Frye, says in his preface, " . . . I wish to say—and in all earnestness—that the militia of to-day is not the militia of thirty, twenty, or even ten years ago; that nowadays the incompetent and the vicious are allowed to remain in civil life, and are not given places in the ranks of the volunteers; and that those who take the solemn oath of enlistment do so with the full understanding that they will be required to devote their time, their money, and their best energies to the service, and that they have assumed an obligation to fit themselves carefully and intelligently for the duties of a soldier. The volunteer service of the present time means, to those who find themselves enrolled in it, something more than a mere pastime; and if those who hold it in small esteem could but know of the faithful, conscientious, and untiring work that, from year's end to year's end, is being done in armory and camp, they would leave unsaid, it seems to me, the half-contemptuous words that too often come to the ears of the hard-working, long-suffering, and unrewarded citizen soldier." Self-contained, honest, brave words these. They are recommended to the consideration of those who, in time of trouble, look to the citizen soldier for the protection of life and property, but smile in a superior way at them *when they don't need them.*

In a note on the battle of Alexandria, March 21, 1801, the *United Service Gazette*, in speaking of General Sir Ralph Abercromby's death-wound, says, "He was wounded early in the day, but bore up till the

victory was won. He was carried on board the 'Foudroyant' (an old battle-ship that we hope shortly to see in the Thames), and died on the 28th."

In regard to the "Foudroyant" (which was a capture from the French, an 84-gun ship, long considered the finest ship in the British navy), she had been flag-ship of Sir John Jervis (Lord St. Vincent), and no greater traditions attached to any ship of that service. Yet, the other day, they sold her to a German ship-breaking firm, and she was taken across the North Sea. By the time her upper works were off public opinion in England caused a subscription to be made, and she was bought back from her foreign purchasers, and it is, we believe, intended to restore her—as near as may be—to her original condition, and keep her moored in the Thames, as public property. But this is by the way. What we set out to say was that the English regiments in the campaign of 1801, in Egypt, were granted the Sphinx, to be placed on their regimental colors. "The peculiar distinction of wearing their number on the back of their caps as well as in front was given to the Twenty-eighth because their third rank (the British fought then in three ranks) repelled an attack on the rear, while the other two ranks steadily faced the foe in front. But other regiments fought with equal gallantry."

Tens of thousands of soldiers who passed through Philadelphia during the war will be sorry to hear that Mrs. Cooper is dead, at eighty-three years of age. Mrs. Cooper's husband was the founder of the noted "Cooper-shop Volunteer Refreshment Saloon," at Washington Street wharf. He was by trade a cooper, and had carried on business on a large scale, so that his "shop" was an admirable place for the purpose,—a long, one-storied building, just where, at that period, the mass of soldiers were landed to take the trains for Baltimore and Washington, at Broad and Washington Streets. Here (at the cooper-shop) all soldiers and sailors of the Union were welcomed, day or night, and facilities for washing, plenty of clean towels, and a hearty meal were all provided, without money and without price.

The writer once took an early breakfast at the "cooper-shop" (3 A.M. the hour was), when on the way to Washington with a large draft of seamen. Our coming was telegraphed an hour or two before, and we found the long tables, with spotless white cloths, all prepared. The place was well lighted and cheerful, and the breakfast was fried ham, hominy, fresh bread and good butter, and plenty of coffee, hot and strong, served by buxom lasses (all volunteers, from Southwark and Moyamensing), who are matrons of grave demeanor now. The officers had a table near the door, under the special care of Mrs. Cooper,—but their fare was exactly the same as that of the men. And it was good enough for anybody,—wholesome, clean, appetizing, and plenty of it.

Mrs. Cooper was an honorary member of Meade Post, No. 1, Grand Army of the Republic, and the customary tribute to her memory was paid by that body.

The first complete "Life of General Wayne," with a history of the "Pennsylvania Line," appears only this year.

The author, Dr. Chas. J. Stillé, the President of the Historical Society of Pennsylvania, has had access to letters and papers which have not been before published, enabling him to give us a history of the times and the operations with which Wayne was concerned in one complete sequence. It is remarkable that no "life" of Wayne—a commander second to none in conduct, strategy, and gallantry in the trying times of our Revolution—should not have been previously written. Even as commander-in-chief of the United States army, appointed by President Washington in 1792, one would think that his conduct in the campaign against the Northwestern Indians would of itself have entitled him to the honor of a complete biography, if he had never been at Stony Point, Monmouth, or Yorktown. As the author very truly remark, "The very brilliancy of Wayne's reputation as a fighting general has somewhat blinded the eyes of his countrymen to those military qualities which he possessed in common with all great soldiers. For the moment it is only necessary to say that no important strategical movement was undertaken by Washington while Wayne was under his command without consulting him. His illustrious chief knew that he could trust him thoroughly for the execution of his part in any plan assigned to him, for his heart was in his work; every faculty of his mind was bent to its accomplishment, and he never disappointed those who trusted him.

"There is a general impression . . . that he was simply a *beau sabreur*,—a sort of reckless dare-devil, who could be relied upon, and was at all times called upon, to lead with unshrinking courage the most desperately dangerous operations. People forget that he many times proved to the satisfaction of his great chief not merely that he was impetuous in action, but that while he was quick in conception and prompt in execution, he was most cautious and careful in preparation and unfailing in resources. If we are to judge Wayne simply as an intrepid leader for whom personal danger had a certain positive charm, and not as a great soldier possessing that rare combination of qualities which go to make up the illustrious general, we shall fall into great error."

The origin of the *sobriquet* "Mad Anthony" is given fully by the author, but is too long to introduce here. It really came from a soldier saying "Anthony is mad," meaning angry, when he was threatened with "forty save one" lashes if he repeated an offense.

The illustrations are few, but exceedingly well chosen. There is Wayne's remarkably handsome head as a frontispiece. An engraving, full size, of the medal bestowed by Congress for the capture of Stony Point,—on the obverse, "*Antonio Wayne Duci Exercitus*," and an Indian handing a wreath to an officer in Continental uniform; on the reverse, a supposed view of the field of battle, with "*Stony Point Expugnatum*," and the date. There is also a good photogravure of the Wayne house,—still occupied by the family,—an excellent specimen of the solid residences of the time and neighborhood, of stone, spacious and comfortable, with secular trees around it. It is within a short distance of Paoli, the scene of the so-called "massacre," which Dr. Stillé disposes of in a few words, from Wayne's own letters, and only an afternoon's drive from Valley Forge, where the bitter winter hardened the men under Steuben's training for Monmouth. The only other picture is that of the very ancient and quaint St. David's Church,—not so far from Wayne's homestead,—which shows his tomb in the background.

The world is pretty well tired of the Panama business, and we should not revert to it but for a wish to quote what seems a striking arraignment which was contained in an article in the *Fortnightly Review*, by no less well known—we had almost said notorious—a person than "Ouida." The article is entitled "Poor Abel," and deals with the sympathy which the "Cains" get nowadays. "Ouida" says, "Ruin, such as that caused by the Panama enterprise, spreads over an area as vast as the ravages of cholera can cover. Yet Madame de Lesseps exclaims in good faith, 'What do they reproach us with? what harm have we ever done?' and the tide of general pity flows towards La Chesnaye rather than towards the hundreds of thousands of humble homes on which the blackness of utter ruin has descended in an endless night."

We are inclined to think that *Ouida* must hold some Panama bonds herself. She goes on to say, "The sands of Suez were cleaved and the waters poured through them from sea to sea by the torture and slaughter of countless numbers of fellahs, nominally free but actually slaves, who toiled and fainted and perished under the rays of the sun and the lash of the overseer. But no one ever pitied them, no one ever thought of them; they were never named to sully the glory of the great enterprise which was after all only a job of the Second Empire on a gigantic scale. Uncounted and unpitied like the Egyptian fellahs, whose dews of death fertilized the barren sand-drifts of Port Saïd, the victims of the Panama speculations have suffered and starved in thousands of little towns and obscure villages and miserable quarters of great cities, and the misery of them will be no more known than

the numbers are counted of a shoal of mackerel trapped in the huge web of a steam-trawler's nets. The insanity, the agony, the wretchedness, the crime, the prostitution, the infamy, directly and indirectly caused by this ruin of thousands of families can never be estimated; it can no more be computed than the bones of the fellahs who perished in the making of Suez can be gathered together in the land of the Pharaohs.

"But this fact excites small compassion and awakens slight sympathy. The man who caused it, the 'grand français,' sunk in the torpor of second childhood, obtains all the pity as he gained all the profit." At this point we feel sure that "Ouida" had Panama bonds. She goes on:

"He has seven great crosses of illustrious orders on his breast. It is he, the slayer of the peace and prosperity of the multitudes of families of every class who trusted him, who is now pitied, glorified in verse, declared a martyr. The unutterable wretchedness wrought by him, the suicides, the crimes, the ruin, the torture caused by his misleading eloquence, are all unpitied as they must be forever incalculable till the crack of doom.

"The tempter went far and wide over the fair land of France, and as the piper of Hamelin with his sweet piping drew the children out to their death, so he with his dulcet promises drew out the hardly-earned coins from the pitcher in the chimney corner and from the box under the roots of the apple-tree, and the souls of their owners with them, in a hallucination of golden dreams; and he drew after him also the lives of the young and the strong, who believed in his sweet melodies and followed him in faith across the seas to the barren straits and the pestilent air, where all the fortune they found was in fever and delirium and death. And now when the piper sits with his magic music dumb, those around him ask, what harm did his piping do?

"Before the dull vision of the spectre which was once Ferdinand de Lesseps—'assoupi dans son fauteuil, une converture sur ses membres refroidies, et la paleur de la mort sur son visage amaigri, à peine reconnaissable'—there may pass in a ghostly vision all those perished multitudes of tortured fellahs and of buried peasants. Perhaps the dread vision may haunt him after his Pharsalia as it haunted Pompey before his. But what does this serve the dead and the ruined?

"Fitting close to a century steeped beyond all others in financial putrefaction and the poisonous exhalations of rotten wealth!"

Commend us to a bright woman for a good "tongue-lashing" in a case where she feels very strongly. And who can deny that "Ouida" is right in every word she utters?

Some little time ago the daily journals announced the wreck of the steamer "John Hancock," at Sandpoint, Alaska, during a heavy gale.

This little vessel had reached a good old age, as vessels go, and her long service shows that good honest work and material had been put into her when she was launched at Boston, forty-three years ago. Not much larger than a modern sea-going tug, or light-house tender, she was, when selected as one of the vessels for the surveying expedition to Behring's Straits and the North Pacific and China seas, built upon to make room for her ship's company and stores, and sailed under the command of Lieutenant John Rodgers, that excellent officer who was destined to make his mark so distinctly in after-times. The writer well remembers that when she left the Boston Navy-Yard doubts were freely expressed as to her ability to encounter the seas of Cape Horn and of the North Pacific, yet she was one of the most useful vessels of the time in the latter region. If we are not mistaken, Commodore Perry pressed her into service in Japan, and we believe (subject to correction) that the treaty between Japan and the United States, which opened the former country to the world, was signed on her deck. The exploring expedition of which she formed part was upon almost as large a scale as the Wilkes expedition, and consisted of the sloop-of-war "Vincennes," the "John Hancock," the brig "Porpoise," the store-ship "John P. Kennedy," and the schooner "Fenimore Cooper," the whole under the command of Commander Cadwalader Ringgold, United States navy. When that officer's health failed and he was invalided, Rodgers, who had been promoted to commander, succeeded to the command of the little squadron. At the end of a most successful work the "John Hancock" and the schooner were sent to Mare Island Navy-Yard, and the "Vincennes" returned to New York. The stanch old "Porpoise" was lost in a typhoon, foundering with all on board. It was the same year that the "Albany" was lost, with all hands, in the Gulf of Mexico. The disappearance of the "Levant," sloop-of-war, in the Pacific a very few years after this completed a trio of disasters in our navy which ended many valuable lives and saddened many homes. The cause of loss in the cases of the "Albany" and "Levant" is entirely open to conjecture. They simply left port and were never seen again, nor was any vestige of them ever found.

What untold histories are connected with such losses! The writer knew of the case of the wife of an officer of the "Levant," who lived in a small Southern city, where a garden lay between the house and the street, with paling fence and a gate. For years this poor lady passed most of her time sitting at a front window watching "for the click of the gate-latch, for she was sure he was not lost, but would come back to her." After a time she sank into melancholia, and went to meet the one she had watched for so long.

Will the writer be pardoned for here recalling how near he himself came to being in the "Levant"? He had been detailed as acting surgeon of that vessel, and the roster of medical officers for duty was then very

strictly adhered to. It was a promotion for him, and he fully expected to go to the Pacific in her. In the mean time the firing upon the "Water-Witch" occurred, and the Paraguay expedition was fitted out in all haste. One of the medical officers detailed for it resigned rather go at short notice. His reasons were strong ones of a private nature. The writer stood next for sea-service, received orders by telegraph at midnight, and before sunset next day was outside of Sandy Hook bound to Paraguay.

When the expedition had got away the medical officer in question (who had good and strong reasons for his action) went to Washington, explained matters, and, having a good record and good influence, was reinstated by the President. Of course he had then to take the detail for the "Levant,"—the next vessel for sea,—and as his substitute was off Rio, bound home after the settlement of the Paraguay business, he was on board the "Levant," then in that port, bound to the Pacific, and destined to disappear not long afterwards without leaving the slightest trace of what led to the disaster.

The red coats on Gibraltar are like red rags to a bull, so far as the Spaniards are concerned, and very naturally so. The impregnable fortress, ever before the eyes of the Andalusians, as they look across from Algesiras, resting there in foreign hands, while really a part of the soil of Spain, must always be a source of deep irritation, to put it mildly.

The Spanish papers, and especially military journals, frequently refer to the matter, and often in no measured terms; and it would almost seem a graceful thing in England to let it go,—*for a consideration, of course*, for John Bull is not fond of letting go his hold on any part of this earth's surface unless the change is to be in his favor.

Those of us who know Gibraltar, as far as a foreigner can know it, will remember that the "Rock" is one of the very strictest garrisons in the world,—a traditional discipline existing derived from the siege of 1782, when the stronghold had already been in British possession seventy-eight years. For a long, long period such possession was a great thing. In sailing-ship days the anchorage back of "the Rock" was a necessary thing for vessels bound to the westward, during westerly winds. The writer himself has seen more than two hundred sailing-vessels pass out of the straits with a Levanter, or easterly wind, after long detention behind "the Rock;" and a grand sight it was early on a bright morning. There was almost every flag under the sun,—Turks and Italians and Austrians and all the rest,—but that is ancient history in these days of steam.

It is rather remarkable that many of the arguments why Gibraltar

should be given up come from English sources. One of these was advanced some time ago by Captain Gambier, of the English navy, in an article in the *Fortnightly Review*.

Captain Gambier asserts that the hold of England, by her fortresses and fleets, upon the Mediterranean is a mistake; and not only strategically a mistake, but that it will prove a serious source of weakness when it comes to war. He even declares that India may be lost by adhering to the present plan. He says the British fleets could not retain command of the Mediterranean unless they neglected other duties. Gibraltar has, by the use of modern artillery, become vulnerable from the other side of the bay.

Of Malta and Cyprus Captain Gambier says that they are only valuable to England so long as she has the use of the Suez Canal, unless, indeed, she intends to take part in the next great European war; and he also says that the great ditch in the sand can easily be destroyed by a little dynamite, while the Red Sea route would be fatal to large numbers of British troops if it became necessary to use it in summer-time.

Captain Gambier proposes that England should free herself from European complications by making use of the Cape of Good Hope route in case of war. To that end she must exchange Gibraltar for the Canary Islands, and "somehow" gain Madeira and the Cape Verde Islands from Portugal; all the three to be garrisoned. Then, by consenting to evacuate Egypt, it is supposed that France would give up Madagascar, and the chain of garrisons and coaling ports on the way to India would be complete.

Captain Gambier does not suggest how the Cape Verde group can be acquired. Except for the purpose of coaling vessels they would not prove a very valuable acquisition, but for that purpose St. Vincent, the most arid and barren of the group, is an ideal place. A perfectly safe and smooth anchorage, enough for two or three great fleets, with a windward and a leeward entrance in the very strength of the trades, and no rocks or shoals except a little pinnacle which stands in mid-channel like a beacon, the dullest sailing collier, once clear of the Bay of Biscay, has no excuse for not getting there. It is, as we have said, barren as an extinct volcano, and has hardly any water, but that is nothing in these distilling days; and just across the channel to the north is the fine island of St. Antonio, which produces, or could produce, almost anything needed in the way of fruit, vegetables, and flesh meat. The waters teem with fish of many kinds.

Many steamers coal there still, but before the opening of the Suez Canal there was seldom a day that one did not call, and often more than one. The writer has been there in former times much oftener than he liked, and on one occasion remained at anchor for some weeks without putting foot on shore, for the cholera was raging to such an extent that the twelve hundred negroes and Portuguese who formed

the population were almost wiped out. In fact, there was not left force to bury them, and for days and days under that bright sky and fine trade the black clouds rolled up from a limekiln to the westward, where the victims of the pest were cremated by wholesale. A great many steamers had to coal there at that time,—bound to South America, the Cape of Good Hope, India, and China. The Crimean War was just over, and regiment after regiment of English troops were being sent out to the Cape and India. Then Australia was receiving a strong influx of the better element of emigrants who could afford to go by steam. Many a jolly day we had on board these vessels, which brought news from the outer world to African cruisers; and the passengers in turn, many of whom had never been out of England before, seemed pleased to see what a Yankee man-of-war was like.

In those cholera times some few "tough ones" managed to load lighters and anchor them in the bay. Then the steamers had to send their own people to tow them off and discharge them and take them back and anchor them, being thus supposed (constructively) to have had no communication with the shore. Porto Grande is certainly a great position for a coaling port, and other people, we may add, are paying much more attention to coaling ports than our own government seems to be doing.

"Following the example of the Germans, we have," says the *Army and Navy Gazette*, "lately been equipping the front rank of our dragoon regiments with the lance. It is strange how history repeats itself in this matter of the lance. The original Polish lancers invariably were followed by swordsmen in the rear rank. Major G. R. Elliot, Third Bengal Cavalry, in his notes on Cavalry Literature, lays stress on this fact. Montecuculi pronounced the lance the 'queen of weapons.' Nowhere did he advocate the use of the lance in the rear rank. On the contrary, he distinctly lays down that swordsmen must follow in rear of lancers,—'Où les cuirassiers qui suivent au trot, entrant après eux, font un grand carnage.' Another high authority of his time, the Duke de Rohan, takes the same view. He published about 1632 a work entitled 'Le Parfait Capitaine.' This book reached its fourth edition in 1643, and was reprinted in 1667. It is considered to be the best military work published during the period,—1630–1730,—and was translated into several languages. Rohan writes as follows when treating of lancers. He says, 'Les Espagnols seuls ont encore retenu quelques compagnies de lances, qu'ils conservent plutôt par gravité que par raison; car la lance ne fait effet que par la roideur de la course de cheval; et encore il n'y a qu'un rang qui s'en puisse servir tellement que leur ordre doit être de combattre en haie; ce qui ne peut résister aux escadrons, elles feroient plus d'embarras que de service.' Analysis

of the views expressed by the Duke de Rohan gives the following conditions under which lancers can be effectively used: The lance is only useful from the swiftness of the horse. This is a mathematical fact, for we know that it is the mass multiplied into the velocity that gives the power or force in moving bodies, and that directly velocity ceases the momentum or quantity of motion is lost. 'Roideur de la course de cheval' are the words used by Rohan. 'Roideur' is old French for 'raideur,' which means swiftness. The lance can be used with effect only in the front rank. Rohan states on this head, 'Il n'y a qu'un rang qui s'en puisse servir.' It is quite clear from the above extracts that the use of the lance was perfectly well understood and practiced in the so-called middle ages. Nowhere was it then implied, either directly or indirectly, that the lance is a perfect weapon, and a panacea for all the cavalry evils under the sun; quite the reverse, its merits and demerits were logically, calmly, and reasonably discussed, as much for the lance as against it. Above all, the older writers insist over and over again *that the lance is a weapon of only partial application*,—that is, useful in the front rank when backed up properly by swordsmen. Its modern use in the rear rank was never even mentioned, much less advocated, and this is now one of the standing puzzles of modern cavalry organization, Who first gave the lance to the rear rank and his authority for the innovation?"

One of the most curious of the "fads" developed by the anniversary year was that of casting a new Liberty Bell from "relics" contributed by persons who seem to have thought very little about what they were doing.

In the first place, it is difficult to perceive what such a bell has to do with the discovery of the New World by Christopher Columbus in 1492, and celebrated (very tardily) by us in 1893.

Any other time would do as well for a new "Liberty Bell," if we *must* have one; but it is to be considered that there can be only one Liberty Bell.

That one was once before lugged down to a small exhibition at New Orleans, but came back none the worse. It has been sent to Chicago, and when it comes back, it is to be hoped that it will remain in its proper place, henceforth and forever, in spite of the wish of municipal authorities to make it an excuse for a free trip.

In its proper place the "Liberty Bell" is a valuable and interesting relic; not only because it tolled upon the momentous occasion when the Declaration of Independence was proclaimed, but because it bore upon it so singularly prophetic and appropriate a text: "Proclaim liberty to all the land, to all the inhabitants thereof."

It was originally brought from England, to be placed in a building which, plain and unassuming as it now appears, was considered "the finest in all the provinces." One day it cracked, and then was recast, in this country, with the original form and lettering. After ringing out the tidings of the Declaration it performed the part of town bell until it cracked again, and since that has reposed—where it ought always to remain—in the hall of the building for which it was cast.

If all the things told about this new Liberty Bell are true, there has been a wanton and fearful destruction of relics, which, if they are worth anything, should not be melted by a bell-founder. A great amount of pennies seem to have been gathered from the children of Sunday-schools, and such places, to go into this wonderful bell; but that only deprives the poor little souls of a certain amount of lollipops which might have hurt them. The real difficulty comes when they begin to send, for melting, Revolutionary sword-hilts, Aunt Jemima's silver candlesticks, great-grandma's silver snuff-box, and the shoe-buckles of Major Smith, of the Continental army.

It is possible that many such relics are spurious. It is also possible that enthusiastic but misguided persons, during temporary exaltation, may have forever sacrificed very valuable memorials of past times.

Mr. F. H. Errington, in writing concerning the English infantry soldier of one hundred years ago in the *United Service Magazine*, quotes a number of authorities, such as the "Military Regulator" (1780) and the "Military Course for the Government of a Battalion" (1777), both by Thomas Simes, late of the Queen's Royal Regiment, the "Regulations of 1786," "Dalrymple's Tactics" (1782), "Bland's Discipline" (1762), and several others. Mr. Errington says, "It is difficult to learn from the books what sort of relations existed between the men and their superiors, though sympathetic treatment is inculcated. According to the 'Military Regulator,' the corporal is to use every pleasing method to endear the soldiers to their king and corps. The sergeant should be a man of real merit, temperate in every point, abhorring vice. The captain's first object must be to gain the love and esteem of the men, and to command them properly he should first know them and watch them in different situations. Misconduct under fire was of course sharply dealt with, and although not so savage as Frederick's order of battle after Molwitz,—that if the cavalry commanded for the attack should be repulsed without having done their duty, the grenadiers should fire on them even to extermination,—the instructions issued by Major-General Wolfe for the Twentieth Regiment of Foot, then lying at Canterbury, in case of the French landing in 1755, are impressive in their stern brevity: "A soldier that

takes his musket off his shoulder, and pretends to begin the battle without orders, will be put to death that instant." "A soldier that quits his ranks, or offers to fly, is to be instantly put to death." And in language very intelligible to the soldier of to-day, "When the troops see the enemy getting over the parapet, they are to fix bayonets and make a bloody resistance."

Almost grandmotherly, on the other hand, were some of the regulations, as, for example, the following for the use of regiments upon their arrival in the West Indies (October 27, 1794): "Any exertion in this climate throws a man into a violent sweat; if in this situation he mounts a hill or stands in a strong current of air, it is very probable he will cool too fast; it is pleasing to the sensation, but very dangerous to health." In dealing with punishment, Francis Grose, in his "Military Antiquities" (1788), incidentally mentions that in the East Indies the Company's troops often inflicted sentence of death by shooting the criminal from the mouth of a field-piece, a method which he believes to have been adopted by Sir Eyre Coote on some of the king's troops.

Thomas Simes calls gaming and swearing the two fashionable vices among the officers in 1777; the men seem at all times to have remained constant to one ruling passion,—drink. General Bland recommended that the men of each company should be divided into messes, each of four or six men, according to the number in a room; and that every pay-day each man should be obliged to appropriate a part of his pay to buy provisions, "otherwise they will spend it in liquor."

The English *United Service* lately said, with justice, that "the variety of guns and ammunition in use in our navy has long been looked upon as constituting a grave source of danger, and it is with some satisfaction that it is observed that the new 12-pounder which is to form the chief armament of the projected torpedo-boat-catchers is to have the advantage of taking the same cartridge and projectile as the new naval boat and field gun. Not a bit overdrawn is considered the picture lately presented by a correspondent of the *Globe* of what may happen if we imagine, say, half the Mediterranean squadron, after a naval action or the bombardment of a fortified place, has expended all its ammunition and has been ordered to Malta to replenish its magazines. Does anybody suppose that the most serious mistakes would not be made in the hurried serving out of gunnery stores to the various ships?"

The doubt as to the wisdom of so many kinds of ammunition on board ship has been expressed on more than one occasion in the writer's presence by officers of experience, but doubtless the modern gunnery

expert will see to it that trouble will not arise during the heat of action. In former days the gunner was always a seaman, and next a gunner. Now the position is probably reversed, and the men in the magazine are, first of all, gunners.

How things have changed! We always had pretty good shooting in the navy. In fact, our gunnery gained us most of the frigate actions of 1812–15. Even at so late a date as the writer's entrance into the service such a thing as an expert in guns and gun-making, or the use of guns, was almost unknown. Paixhan and Ericsson had produced some pieces which were a wonderful advance upon the old naval ordnance, but for the ordinary battery of a cruising-ship the service of the magazine and the gun-drill were both delightfully simple. The lieutenant of the division in his swallow-tailed coat, or, possibly, a short jacket, gave the same orders over and over again: "Load with cartridge! Load with shot! In tube and prime! Run out! Handle match and lock-string! Point to the object! Watch the weather-roll!" etc., while the powder-boys skipped about with leather receptacles much like reduced specimens of the fire-buckets which hung in the halls of houses.

It is wonderful what good target-practice they used to make, especially when we consider that there was no fixed time for such practice, and that it was often pretermitted for many months. The purser usually commanded the powder division, and the passers were made up of wardroom boys and idlers. In the hopeless struggle of the "Congress" against the "Merrimac" and consorts, the powder division of what was the most powerful sailing frigate of her time was commanded by the paymaster, who was the brother of the captain of the "Merrimac." In the very hottest part of the action—if it could be so denominated—the paymaster said to the writer, as they met on their respective duties, and people were being slaughtered by scores all around, "The worst of it all is that my brother is in command of that vessel." "Oh, paymaster, you can't be certain of that." The old gentleman shook his head, and said, "I know it too well," and then turned to his duties. Almost immediately a shell raked the line of passers of "full boxes" from the after-magazine, and after that the paymaster himself struggled manfully to keep up the supply, which was easier, as only now and then was it possible to fire a gun. Even this ceased after the ship took the ground, for those guns which might have been pointed in the proper direction were dismounted. It could hardly be possible, in the modern protected vessels, for such a casualty to occur in the powder division.

The more holidays and days of anniversaries we have, in this hard-working country of ours, the better. We are gradually extending the number of legal holidays, and in some States they really give a great

outing to an immense number of people. In Pennsylvania Good Friday is a legal holiday. Tree-planting or Arbor Day is being more and more observed every year in several of the States; and this year a very promising start was made in Philadelphia, under the auspices of the Colonial Dames and the Sons of the Revolution, in keeping "Flag Day," or the anniversary of the selection of the design for our national ensign. On the 14th day of June, one hundred and sixteen years ago, Congress resolved that the flag of the thirteen States be thirteen stripes, alternate red and white, with a union of thirteen white stars on a blue field, representing a new constellation.

The pupils of the public schools had patriotic songs and recitations, and each principal gave a short address, reciting the circumstances under which the design was adopted. Briefly, they were as follows: A Committee of Congress, in company with General Washington, went to the shop of Mrs. Betsy Ross, on Arch Street, where she carried on business as an upholsterer. (The house, now numbered 230, is still there. It is of two stories, with old-fashioned peaked roof.) Mrs. Ross was noted as a needle-woman, and is said to have made shirts for the general, and many other distinguished men of the time, which were noted for the elegance of their ruffles at bosom and wrist. They naturally turned to her, when there was question of the making of a flag which the law required to be displayed on the 4th of July following.

General Washington showed Mrs. Ross a rough draft of the desired flag, and asked her if she could make such a one.

"I will try, but I would remark to the general that the stars would be better with five points instead of six, as they appear in the drawing."

The change, an obvious improvement, was adopted, with a rearrangement from a circle to the cross, three at the top, three in the middle, three at the bottom, two between the top and middle row, and two between the middle and bottom rows. This design was used until 1794, when Congress decreed fifteen stripes and fifteen stars—on admission of two new States. In 1818 alteration was again made, when a member of Congress remarked that "at the rate the United States were growing the tallest pine in Maine would not make a mast tall enough to hoist the flag upon if a stripe were added for each new State." A resolution, however, approved April 4, 1818, provided "That from and after the 4th day of July next the flag of the United States be thirteen horizontal stripes, alternate red and white; that the union be twenty stars, white in a blue field, and that on admission of a new State into the Union one star be added to the union of the flag, and that such addition take effect on the 4th day of July next succeeding such admission."

Mrs. Ross married James Claypoole some time after this flag-making event, and lived until January 30, 1836. Decoration Day does not find her grave neglected.

It has been suggested from influential quarters that the "Colonial Dames" and "Sons of the Revolution" acquire this modest house,—which has the same floors, and stairs, and windows, and the same fireplace, with its blue and white tiles,—not to be removed elsewhere, after the fashion of the day, but to be preserved *in situ*, and to have the public school children march there every year, on "flag day," and be presented, each one, with a miniature American flag.

Once more we must translate a little bit of Parquin's "Mémoires."

His regiment (a distinguished one) was the Twentieth Chasseurs, and, apparently, they were generally pretty well horsed, picking up mounts on the field of battle very often, which they sometimes turned into money. In regard to bayonets for horse soldiers, he says, "On October 13, 1806, the day before the battle of Jena, our regiment, with the Seventh Army Corps, had to make a forced march to reach our indicated position. That day we bivouacked on the fields, near a village where lay the marshal and his staff and a division of infantry commanded by General Desjardins. This division was ordered to occupy an important pass by which the whole corps was to defile next morning, the 14th October, to get to the battle-field of Jena, where the whole Prussian army was collected.

"As we were near the village of Géra, we had mutton and geese, for they are very plentiful in Saxony. The field on which we bivouacked was planted with potatoes, so that we had only to dig under our feet to get them, and this we did with our bayonets, an arm which had just been distributed to our regiment—and which never served any other purpose. In fact, we left them there"—when they marched next day. "But, at the end of the campaign, they did not fail to charge us seven francs fifty centimes each" for loss of arms.

"But we had gotten rid of an arm we did not like, and was no good to us."

Andrew Lang wrote, in regard to the Chicago exhibition, "The Americans are certainly, with all their superficial astuteness, a simple people. Now, simplicity, as Thucydides remarks, 'is no small part of a noble nature,' and it is part of a young and buoyant nature, easily pleased. One envies, one does not reproach, our 'cousins across the sea' (as Mr. Lowell said we called them when we were afraid of them) for their simple delight in a new toy."

The exhibition at Chicago has certainly been treated as a toy,—let us say a shuttle-cock,—apparently for the greater honor and glory of people who really meant well, but who had not the preliminary edu-

cation and training fitting them for such a position. The superb buildings and grand conception of the plant were not due to Chicago talent, but the cross purposes, the petty conflicts, the "society" struggles, were purely Chicagoan. Our foreign guests' private thoughts are sacred, of course, but we would "give a penny for them," after some of the "receptions" and "breakfasts" which took place in the early summer.

As a matter of education the exhibition is a blessing. Hundreds of thousands of people have seen things which they never dreamed of before; and it must have a due effect in house building, in decoration, in amelioration of existence in many directions.

We do not care to say how many years have passed since the writer, then a very small boy, was taken to see a young lady, a friend of the family, who was to be married to an army officer. It was particularly impressed upon his youthful mind that she was going to live at a place in the wild West, where there were plenty of Indians, and that the name of the place was Chicago. There was something fearfully barbaric about the name to our youthful imagination,—an impression ever since retained, in spite of more mature knowledge.

Never, in the history of human affairs, has a trading post, planted among savage wigwams, grown to such proportions as has Fort Dearborn in the span of one ordinary human life.

There are still many wild men in Chicago. A more heterogeneous population probably is not to be found on the face of the earth, except, possibly, in New York. It is like the cave of Adullam, and it would be curious to learn how many persons now living in Chicago were born there. The wonderful prosperity of that city goes to show that slow growth and consequent homogeneity are not always necessary to the success of a community—so far as material things go.

"A gruesome story of a rugged country" Mr. Spears calls his little book on Death Valley, of which we have all heard or read some wonderful tales—some true and some not. Death Valley is in the southeast corner of Inyo County, California, and is about seventy-five miles long, from eight to fifteen miles wide, and runs about north and south. The hottest known spot on earth in summer time, it is said, by government surveyors, to be more than two hundred feet below the level of the sea. In the range fifteen miles west of it is Telescope Peak, rising two miles above the sea, and, at about the same distance to the east, Funeral Peak rises eight thousand feet above the sea. At certain seasons the percentage of moisture in the air of this great pit is less than 1. When we consider that a proportion of seventy is necessary for health and comfort, we understand how it is that men have died there from heat and lack of moisture with water in their hands.

But, for a portion of the year, men brave this climate for the sake of obtaining the borates and chlorides which are found there in immense quantities. From end to end the center of the valley is one long salt marsh, in most places so soft that a man would need snow-shoes to keep from sinking. Elsewhere the ooze, which is of unknown depth, has been crusted over, but only with firmness in one locality. A road had to be made, and hear what Mr. Spears says about it: "It was made across a stretch of solid salt some eight miles wide. In a sense, it was level: there were no hills or valleys. In another sense, there was scarce a level square inch on the whole bed, for the salt crust had, probably through the influences of heat and moisture from below, been torn and twisted and thrown up into the most jagged peaks, pyramids, and cris-crossed ridges imaginable. They were not high,—none, perhaps, more than four feet—but there was not even level space for a man's foot between them. Every step made by the explorer was on a ragged point or edge of some kind. The nearest approach to anything like that salt bed was on the ice in Lake Erie when two fields had been jammed together by the wind and held so by the frost. The ragged ice masses were somewhat like these salt masses. They were larger, but were neither so sharp nor in any way so difficult to cross.

"Judging that the crust would sustain the weight of wagons, the workmen swung their sledge-hammers day after day, until they had beaten down these pinnacles into a smooth pathway six feet wide. It was, perhaps, the most laborious engineering work ever done in this country, for the climate, and the location far from civilized habitations, combined to retard the efforts of the workmen. As one enters the easterly end of this road, two unmarked graves are seen in the salt crust near the track. They are graves of unknown men who died there from the heat, and, after the fashion of the country, were buried where they fell—they were covered over with pieces of salt broken from the pinnacles near by; the crust was too hard to warrant digging into it. One must travel a long time to find two more graves like those, if, indeed, two more such can be found anywhere in the world."

In Death Valley (which was first named from the massacre of some emigrants by Pah' Utes,—the Arabs of the western desert) a register of the thermometer shows 137° on the northern side of an adobe house. The greatest recorded heat of the arid region about the Red Sea is 127°. "It is such weather as this that the sand storms in their deadly fury sweep through the valley, and even desert birds, caught away from the saving spring, fall down and die. It is a fact that since the ranch was established, one man has died from the heat while lying still in the house; and another, while riding with a canteen in his hand, on top of a load of borax bound down the valley, fell over and expired."

We may make just one more extract from Mr. Spears's most interesting book: "One of the marvelous sights of the Nevada

Mountains is the wood-laden mule en route to the camp." It is principally the nut-pine, which grows at high altitudes. "The Mexicans have almost a monopoly of wood-packing, as it is called. A wooden saw-buck saddle is clinched on the animal's back, over which are hung two round bars of iron, like big J-shaped hooks, that hang down on each side of the mule. The wood is piled into these big hooks and up over the mule's back until there is about twice as much wood as mule in the outfit. In fact, each mule carries one-fifth of a cord of nut-pine, and is happy under the load. Having loaded his mules, the Mexican starts them, secured one to the other by long halters, down the precipitous side. The picture thus made is one never to be forgotten by the tourist. Writers of books on naval architecture, and other scientists, have much to say about the centres of gravity and meta-centres. They conclude that when the meta-centre is below the centre of gravity in a ship she is sure to turn over on the slightest provocation. They teach that when the centre of gravity of any body gets beyond the line of its base it is sure to upset. But they don't know the mule in the wood business on the steeps of the desert mountains."

Hundreds upon hundreds of cords of fuel for the furnaces of the borate factories are thus deposited upon *mesas* which teams can reach. The way down, on wheels, is not without its picturesque scenes, and its dangers.

E. SHIPPEN.

NAVAL AND MILITARY NOTES.

NOTES AND DATA ON NAVAL AND MILITARY MATÉRIEL AND ALLIED SUBJECTS.

It is the intention to collect and publish in this department of the "United Service" all information obtainable from current publications and other available sources concerning ships, guns, armor, explosives, small-arms, military and maritime affairs, and kindred subjects. As the data are derived largely from unofficial sources, strict accuracy cannot be expected; but all reports will be carefully examined and compared with others on the same subject, and it is hoped, by this means, to attain fairly correct results. Erratum notices will be published whenever errors are discovered in data previously given. As the development of the present plans for collecting information progresses, it is hoped to secure fuller and more authentic reports.

WAR-SHIPS AND TORPEDO-BOATS.

Great Britain.

The torpedo-boat destroyers *Havock* and *Hornet*, building by Yarrow, are nearly ready for launching. The side plating is completed and the engines are being installed. In design these vessels resemble first-class torpedo-boats, with increased freeboard, greater length of raised bow, and small deck-houses. The dimensions are as given in the August NOTES,—length 180 feet, beam 18 feet 6 inches. A water-tight deck is worked at about the water-line, extending from the bow to the forward boiler-room bulkhead. This, together with 18 thwartship and other bulkheads, divides the vessel into twenty water-tight compartments. The machinery and boilers are protected by coal-bunkers. Two 24-foot whaleboats, two Berthon boats, and one dingey are carried. The rudder is balanced and arranged to counteract the heel of the boat when turning sharply. The battery consists of one 12-pounder Hotchkiss R. F. G. on top of the conning tower, and two 6-pounder R. F. G., one each side forward just abaft the turtle-back, though provision is made for alternative positions aft. There is one search-light. Three torpedo-dischargers are fitted, a fixed tube forward and a double gun on a turntable aft. The torpedoes are stowed in the bow and are carried aft on a railway. The mast—there is but one—is fitted with a boom-derrick for handling boats and torpedoes, and is also arranged for signaling. The complement is about 40 men and officers, the crew berthed forward and the officers and petty officers aft. The engine and boiler space is about 76 feet in length, the cabin 30. Greater comfort for officers and men has been provided than in any first-class torpedo-boats, the forced ventilation and improved sleeping accommodations being noticeable features. The conning tower is strongly built of ½-inch plates. The *Hornet* is fitted with tubulous boilers, the *Havock* with those of locomotive type; in all other respects the vessels are identically the same. The screws are 3-bladed; the engines triple-expansion, with three cylinders of 18, 26, and 39.5 inches diameter; steam-pressure in boilers 180 pounds.

The three first-class torpedo-boats building by Yarrow are nearly finished. Two are fitted with locomotive boilers

and triple-expansion engines, steam pressure 180 pounds. The third will have tubulous boilers of a new type, quadruple-expansion engines, steam-pressure 220 pounds.

The second-class protected cruiser *Fox*, laid down January 11, 1892, was launched at Portsmouth, June 15. The *Fox* is a sister ship in all respects of the *Cambrian* and *Charybdis* described in the May and August NOTES. The coal-supply of the *Fox* class is 400 tons; complement of men and officers, 300; the mean draught is 19 feet (20 aft and 18 forward) instead of 17 feet 6 inches, as stated in the May NOTES.

The torpedo gun-boat *Onyx*, 810 tons, of the *Jason* (for description see May NOTES) type, has completed her trials. On the 8-hour natural-draft trial, June 14, the mean results were, steam, 125 pounds; revolutions, 218; I. H. P., 2531; speed by log, 17.5. The mean results of the 3-hour forced-draft trial, June 16, were, steam, 140; revolutions, 247; I. H. P., 3546; speed by log, 19 knots.

The first-class protected cruiser *Grafton*, 7350 tons, had her 8-hour natural-draft trial on June 24, with the following mean results: Steam in boilers, 154 pounds; air-pressure in fire-rooms, 0.41 of an inch; vacuum, 27 inches; revolutions, 96; I. H. P., 10,957, speed by log, 19.5 knots. The results of the 8-hour forced-draft trial on June 27 were, steam at boilers, 148 pounds; air-pressure, 1.16 inches; vacuum, 26.7 inches; revolutions, 101.6; I. H. P., 13,484; speed taken by log at half-hour intervals, 20.5 knots. The vessel was practically at load draught, being about two inches too light. The *Grafton* is the only one of her class to be pushed with forced draft (see remarks under *Endymion* in the August NOTES). The trial was said to be satisfactory in all respects.

The first-class, sheathed, protected cruiser *Gibraltar*, whose unsuccessful attempts were reported in the August NOTES, had a satisfactory trial on May 26. The mean results were, steam at boilers, 154 pounds; air-pressure, 0.15 of an inch; revolutions, 105.5; speed by log, 20.4 knots. The vessel was very light, drawing 3 feet 4 inches less than at mean-load displacement, which accounts for the speed with the I. H. P attained. See I. H. P. and speed of the *Grafton* given above.

France.

The French naval estimates for the year 1894 contemplate the laying down of 32 new vessels of various types,—viz., three first-class battle-ships, five second-class cruisers, one third-class cruiser, one sea-going torpedo-boat, five first-class torpedo-boats, four second-class torpedo-boats, nine torpedo-launches, one second-class dispatch-vessel, and three gunboats. The battle-ships, which will be built, two in the dock-yards and one by contract, will have a displacement of 11,000 tons and engines of 14,500-horse-power, giving a speed of 18 knots. The armament of each will be four 11.8-inch, ten 5.5-inch R. F. G., six 3.9-inch R. F. G., sixteen 3-pounder R. F. G., ten 1-pounder R. F. G., and eight H. R. C. The second-class cruisers, one of which will be built in a government yard and four by contract, are of two types. The first type, which is to include the vessels provisionally known as E4, E5, and E6, will be of 3990 tons displacement, 9000-horse-power, and 19 knots speed, carrying four 6.2-inch, ten 3.9-inch, fourteen 3-pounders, and four 1-pounder R. F. G. The second type, which is to include the vessels provisionally known as G3 and G4, will be of 3800 tons displacement, 9100-horse-power, and 19.25 knots speed, carrying six 6.2-inch, four 3.9-inch, eight 3-pounders, and twelve 1-pounder R. F. G. These five vessels are improved *Chasseloup-Laubats*. The third-class cruiser, which is to be built in a government yard, will be a modified *Galilée* of 2300 tons displacement, 6600-horse-power, and 20 knots speed, carrying four 5.5-inch, two 3.9-inch, eight 3-pounder, four 1-pounder R. F. G., and four revolving cannon. The sea-going torpedo-boat, which will probably be built by M. Normand, of Havre, will be a repetition of the *Forban*, which is now under construction, and will be of 125 tons displacement, 3260-horse-power, and 30 knots speed. She

will measure 144 feet long. The first-class torpedo-boats will be of 80 tons displacement, 1350-horse-power, and 28.5 knots speed. The second-class torpedo-boats will be of 53 tons displacement, 700-horse-power, and 20.5 knots speed. The torpedo-launches, which are intended to be carried on the deck of the new torpedo-depot ship *Foudre*, will be 62 feet 4 inches long, displacing 14 tons, having engines of 210-horse-power, and being capable of a speed of 16.3 knots. It is expected that they will be built at Creusot, where the plans have been prepared. The gunboats, of which particulars are not made public, are believed to be river gunboats for colonial service. The most noteworthy feature in the new French building programme is the enormous multiplication of guns in the larger craft. Each of the battle-ships, it may be noticed, will mount as many as 54 guns, of which no fewer than 50 will be rapid-fire, or machine guns. This number is far in excess of that carried by any British ship, and the determination of the French government to mount so exceptional an armament seems to suggest that, great as are the already recognized advantages of the rapid-fire gun, the weapon has a future even more important than is usually claimed for it. M. Gerville Réache has been designated by the commission to report upon the proposals, all of which are likely to be adopted without much discussion.

The torpedo-boat *Lancier* on trial developed a speed of 25.8 knots. The *Lancier* was built by Normand, of Havre.

The submarine torpedo-boat *Gustave Zédé* was launched at Toulon, June 1. A full description of this vessel will be given in a future number of this magazine.

Torpedo-boat No. 146, of the 36-metre type, built by Normand, of Havre, attained 24.26 knots on trial.

The torpedo-boat *Lansquenet* was tried May 18. The resulting speed was 26 knots. The dimensions of the boat are, length, 165 feet 4 inches; beam, 15 feet 8 inches; draught, 4 feet 3 inches. The engines are twin-screw, triple-expansion, of 2800 I. H. P.

Italy.

The *Liguria*, a sister ship of the *Umbria*, *Etruria*, *Lombardia*, and *Calabria*, was launched at Sestri Ponente, June 8. The *Liguria* is built of steel, and is of the following dimensions: Length, 262 feet 6 inches; beam, 39 feet 4 inches; draught, 16 feet 7 inches; displacement, 2280 tons. The battery consists of four 5.9-inch R. F. G., six 4.72-inch R. F. G., sixteen 6-pounder and 1-pounder R. F. G., and two machine guns. One torpedo-tube is fitted. The protective deck is 2 inches thick on the slope and 1 inch on the flat. The engines are twin-screw, triple-expansion, of 6500 I. H. P. The expected speed is 19 knots and the coal-supply 500 tons.

Germany.

The first-class protected cruiser *Gesion* ("J") was recently launched at Danzig. Her dimensions are, length, 387 feet; beam, 49 feet 3 inches; draught, 23 feet; displacement, about 5500 tons. The protective deck is 2.98 inches thick, I. H. P. 12,000, and estimated speed 20 knots. The battery is reported as two 24-centimetre (9.45 inch) B. L., eight 15-centimetre (5.9 inch) R. F. G., and smaller pieces. The rig consists of two military masts.

Turkey.

A small, but handsomely-fitted imperial yacht, with a deck-house in shape of a kiosk, was launched at the Turkish naval dock-yard on April 5. The dimensions are, length, 95 feet; beam, 13 feet; displacement, 55 tons; the I. H. P. is 450 and speed 14 knots.

The *Djerida Bahrieh* states that a large repairing yard is to be constructed at Jeddah.

The turret-ship *Abd-el-Kader*, building at Constantinople and referred to in the April NOTES, is said to be of the following dimensions: Length, 341 feet; beam, 65 feet 6 inches; displacement, 8000 tons. The I. H. P is 12,000 and estimated speed 19.5 knots. The armor belt is 14 inches. The battery is expected to be four 28-centimetre (11-inch)

Krupp B. L., six 15-centimetre (5.9-inch) Krupp B. L., and ten small rapid-fire and machine guns.

HEAVY GUNS.

The Brown segmental wire gun has undergone a severe test at the hands of army ordnance officers at the Sandy Hook Proving-Grounds, and so far as known the results of the firing have been satisfactory. On two occasions pressures of over 70,000 pounds per square inch were obtained without the slightest injury being caused to the gun. The initial velocities registered on the two firings were, respectively, 2550 and 2300 feet per second.

RAPID-FIRE, MACHINE, AND FIELD GUNS.

The 0.30 calibre Krag-Jorgensen rifle having been definitely adopted for the United States army, the musket calibre machine guns will be changed to conform to the new ammunition. Bids have been asked for twenty machine guns of 0.30 calibre adapted to use the new cartridge.

A "recoilless" field-gun carriage has been devised by Colonel de Bange and Captain Piffard, and is being tried by the French military authorities. The recoil is counteracted by a brace extending directly to the rear, but at an angle of about 30° with the horizontal, and terminating in a sort of spade-shaped spur which is driven into the ground. At the carriage end the brace is connected with hydraulic checks and springs, which receive the shock of discharge and, after absorbing the recoil, return the piece to the front. It is expected that this apparatus will prevent the necessity of relaying the gun after each fire, but if the wheels are allowed to move at all this is doubtful.

M. Turpin, the inventor of melinite, who has recently been undergoing imprisonment for revealing state secrets, has taken the French newspapers into his confidence in regard to a new invention which he is about to lay before the authorities. The description of the apparatus is delightfully vague, and the editor of the NOTES must admit that he is devoured by curiosity as to its character. This feeling may surely be pardoned in view of the published reports of the destructive effects of this formidable engine of war. According to the reports, "It renders fighting impossible. It is very light. It is worked by four men and drawn by two horses. It can be fired four times in a quarter of an hour, and at each discharge it throws 25,000 projectiles to a distance of 3500 metres, covering geometrically 22,000 square metres." M. Turpin has only arrived "at the theoretical period of his invention." When it is finished we may expect to see the German army emigrate *en masse*.

The British government will replace Nordenfeldt by Maxim guns on new vessels. The *Bonaventure* will be the first to carry the new pieces, four in number. The *Astrea*, *Cambrian*, *Hermione*, and *Flora* will be similarly equipped, and others will follow as they are ready.

The Navy Department has entered into a contract with the Winchester Repeating Arms Company for the supply of 3000 drawn copper cartridge-cases for rapid-fire 6-inch ammunition. The aggregate cost will be about $65,000.

SMALL-ARMS AND EQUIPMENTS.

The reports that Italy, Brazil, and Chile have adopted the Mannlicher rifle and Turkey the Krag-Jorgensen are denied by the *Köln Zeitung*. Italy will continue to manufacture the Carcano, Brazil and Turkey have made contracts for the Mauser, and the Chilean committee has reported in favor of the latter.

A new army revolver, just distributed to French officers in active service, has exactly the same calibre as the Lebel rifle,—8 millimetres,—and among the improvements it embodies are a diminution of the weight, which is reduced to 1 kilogramme, including the six cartridges, a simplification of the general

mechanism, and a special arrangement for repetition.

Captain Stanhope E. Blunt, ordnance department United States army, furnishes to *Harper's Weekly* of July 1 an illustrated article on "The United States Magazine Rifle." The bullet weighs 220 grains and is fired with 37 grains of smokeless powder, giving a velocity of 2000 feet per second, and a trajectory so flat that at 600 yards it does not rise above the height of a man. The Krag-Jorgensen gun was selected from about fifty tested. The present design is not generally known abroad, and has never been tested there. It is the most recent weapon to be introduced in any army, and is superior to any now in service or known here or in Europe. "Our new weapon weighs about 8¾ pounds, and is exceedingly pleasing and symmetrical in appearance; the barrel is 30 inches long, rifled with four grooves, each three times the width of the lands, and making one turn in 10 inches; the calibre of the bore is 0.30. For the triangular bayonet of our last and many preceding wars a knife-bayonet has been substituted, having a blade 12 inches long. It can be readily adjusted to the gun when required as a bayonet, or when detached can be used for cutting brush, or with a fair degree of success as a hasty intrenching tool."

Ammunition for the new Krag-Jorgensen gun is now being manufactured at Frankford Arsenal. In the course of experiments there it has been shown that a nickeled-steel-covered, unlubricated bullet of the new type is better than the old copper case with lubricated bullet. The velocity attained by the new bullet of 220 grains and .30 calibre is 2000 feet per second, as against 1300 feet for the one of .45 calibre and 500 grains. Small calibre bullets of the new style, fired at hard-oak timbers, placed endwise at 30 yards range, penetrate 30 inches, as against from 4 to 5 inches for the .45-calibre bullets now in use, or the .30-calibre bullet with German-silver jacket, and the former retain their shape perfectly, while the latter are battered into an almost shapeless mass.

GUNPOWDER AND EXPLOSIVES.

A second series of experiments with the newly-invented smokeless powder, made by M. de St. Mare, have been carried out at the Armstrong Experimental Station at Silloth, near Carlisle. This trial proved even more satisfactory than the first. The gun used was the 3-pounder Hotchkiss R. F. G. The distance from the target to the muzzle was 50 metres. With a charge of 12 ounces an initial velocity of 657 metres (2155 feet) was obtained; with 14 ounces, 702 metres (2303 feet); and with 16 ounces, 874 (774?) metres (2867 feet). The last velocity given seems improbable. It is perhaps a typographical error, and should be 774 metres (2529 feet). The powder is blue in color; size of grain for the calibre of the gun used, 10 by 4 by 4 millimetres. The inventor claims it will keep for an indefinite period, absorbing no moisture, which has been a serious objection to all smokeless powders so far invented. The Armstrong Company and another firm in Belgium are in treaty with M. de St. Mare for acquiring the secret of manufacture. Experiments were to have been carried out at Silloth with a gun of large calibre, but a license to make the required amount of powder could not be obtained from the British Home Office without a statement of the materials of which it was to be composed. M. de St. Mare has returned to France, where a sufficient quantity will be made and brought over.

ARMOR.

The Russians think they have solved the problem of piercing the Harvey and Tresidder surface-hardened armor by means of a shell having a wrought-iron cap, which enables it to penetrate the hardened layer without breaking up. *Qui vivra, vera.* In the mean time other people are discussing the return to racking effects by large projectiles and low velocities. The Russian idea has the theoretical advantage of only having to hit once in the same place to secure penetration.

A 9-inch nickel-steel plate made by Carnegie, and representing 1060 tons of

armor, was tried at Indian Head, May 12. The gun used was an 8-inch B. L. R., projectile armor-piercing, weight 250 pounds. Two shots were fired. The first, with 1391 F. S. muzzle velocity, penetrated the plate and about 1 inch into the backing. The second shot, with 1672 F. S. velocity, completely perforated the plate and lodged in the backing. No cracks were developed and the holes were clean-cut, with only the usual fringe on the face.

About June 1 a trial was made at the Redington Proving-Ground, near Bethlehem, of a 12-inch curved nickel-steel plate 16½ feet long and 6 feet high, bent to an inside radius of 13½ feet and fitted to curved backing. Three shots were fired from an 8-inch gun; projectile 250 pounds, Holtzer armor-piercing. First shot, velocity 1577, penetration 11½ inches. Second shot, charge 90.3 pounds powder, velocity 1826 feet, penetration 15¼ inches from face of armor to base of projectile. Third shot, velocity 2005 feet, perforation complete, but projectile broken in small pieces.

MISCELLANEOUS MILITARY NOTES.

From the new edition of the *Prussian Army List*, which shows the status up to the 1st of April, the *Reichswehr* abstracts the following data: The Prussian army counts the following general officers,—viz., 7 field-marshals and colonel-generals with rank of field-marshal (Count v. Blumenthal, Prince George of Saxony, Prince Albrecht of Prussia, Frederic, Grand Duke of Baden, Von Pape, Carl Alexander of Saxony, and Prince Bismarck), 71 generals, 59 lieutenant-generals, and 149 major-generals. The active army comprises 133 *infantry regiments*, with 135 colonels, 140 lieutenant-colonels, 646 majors, 1646 captains, 5485 first and second lieutenants; 14 rifle battalions, with 8 lieutenant-colonels, 11 majors, 60 captains, 232 lieutenants; altogether, with officers *à la suite*, or unattached, 8810 officers for the infantry. *Cavalry*, 1 regiment of life guards, 1 each of cuirassiers and hussars, 2 of dragoons, and 3 of lancers of the guards; 8 of cuirassiers, 24 of dragoons, 17 of hussars, and 16 of lancers; with 23 colonels, 44 lieutenant-colonels, 155 majors, 341 captains, and 1313 lieutenants; or in all, 2091 officers. *Horse artillery*, 33 regiments, with 19 colonels, 38 lieutenant-colonels, 139 majors, 331 captains, 1270 lieutenants; Juterbog school of gunnery, 10 colonels and 10 lieutenants; with officers *à la suite*, in all, 1868. *Foot artillery*, 11 regiments, 2 separate battalions, and a gun-trial company; with 5 colonels, 8 lieutenant-colonels, 38 majors, 101 captains, 393 lieutenants; in all, 675 officers. *Engineers and pioneers*, 16 battalions, with 7 lieutenant-colonels, 13 majors, 83 captains, and 311 lieutenants; 2 regiments of railway brigade, with 4 colonels, 1 lieutenant-colonel, 5 majors, 18 captains, 62 lieutenants, and with inspecting officers, officers of ballooning department, etc.; in all, 731 officers. *Army service corps*, 17 battalions, with 2 colonels, 3 lieutenant-colonels, 13 majors, 47 captains, 98 lieutenants, besides officers at depôts, etc., making in all, 201 officers. Of *reserve officers* there are, for infantry, 55 captains and 4382 lieutenants, in all, 4437; cavalry, 1 major, 97 captains, and 1358 lieutenants, in all, 1456; horse artillery, 27 captains and 1021 lieutenants, in all, 1046; foot artillery, 5 captains and 136 lieutenants, in all, 141; engineers, total 274; army service corps, total 461 officers. The *first levy of Landwehr* (which being now destined for field service, ranks in reality as another reserve) counts altogether 4262 officers, which number, as the *Reichswehr* estimates, would suffice to officer 130 battalions of infantry, 174 squads of cavalry, 76 field batteries, and 16 companies of engineers. The *second levy* (or actual Landwehr,—*i.e.*, for home defense) counts 2166 officers, estimated by our contemporary to suffice for 66 battalions of infantry, 90 squads, 40 batteries, etc. But, the *Reichswehr* adds, this estimate is manifestly inadequate, as otherwise there would not be, as there are, 219 Landwehr battalion districts (some of them being regimental districts), if no more than 196 infantry battalions could be formed. Probably a number of non-commissioned officers may be told off for officers' duty; but none such are

mentioned in the *Army List*, nor are the ensigns or cornets enumerated; in short, the *Reichswehr* concludes, the Prussian authorities seem averse to let others look too much into their cards as regards the formation of their Landwehr, adding that strength courts daylight, but weakness hides, and the proposals embodied in the lately-rejected Military Bill—as regards the formation of fourth battalions and the so-called "rejuvenation of the field army"—would indicate that the main object is a thorough reformation and strengthening of the first Landwehr in particular.

The total charges included in the Austro-Hungarian military budget estimates of the next financial year amount to 127,003,828 fl., which is exclusive of the extraordinary estimate of 3,610,000 fl. for the troops occupying Bosnia and Herzegovina. Although in the speeches of ministers and in the semi-official press there are symptoms of a recoil from excessive outlay upon the army, and some economies have, in effect, been made, the explanatory memorandum which was presented with the estimates justified a progressive increase of the standing effective on the ground of the necessity which exists for Austria-Hungary to maintain her military forces in strength corresponding to those of other powers. Hence a progressively increasing military expenditure is foreseen. In the new estimates, the additions to the cadres of officers call for an augmentation of 479,578 fl., and the increase in the number of men and horses involves an addition of 1,244,302 fl. New mounted batteries and the cadres for mobile siege batteries are to be created. The extraordinary estimates include fourth charges of 1,400,000 fl. for the provision of magazine rifles, and of 2,000,000 fl. for the introduction of smokeless powder. Other extraordinary charges are of 8,400,000 fl. for increasing the company effective in 50 regiments, of 300,000 fl. for mounting new guns at certain fortresses, and of 1,450,000 fl. for works of fortification. The increase of the effective has been in progress for some years, and will have so far proceeded in 1894 that there will be 75 regiments with the normal effective, 27 alone remaining with the reduced effective,—that is, with 9 men per company less than the others. The total proposed increase is of 1791 officers, 9962 men, and 670 horses, and a further increase results from the substitution of combatants for the cadets who have hitherto been borne upon the effective of the regiments. There is also to be a large increase in the number of cadets. Lastly, we note that the reorganization of the engineers and pioneers is to be completed, and that field railway *matériel*, portable tents, and new field wagons are to be provided.

The *projet* of the French Military Budget of 1894 has been distributed. Its provisions are based upon an effective of 28,555 officers, 536,048 men, and 141,059 horses, the gendarmerie being included. This effective is an increase of 215 officers and 8351 men, caused mainly by the creation of two new companies in each of thirteen battalions of *chasseurs à pied*, as well as of a regiment of cavalry, and the filling up of certain vacancies. The total charges proposed amount to 636,701,630 francs, being an increase of 2,091,499 francs upon those of the present year. Taking into account, however, the treasury receipts for the War Department, the actual budget charges are reduced to 607,480,877 francs. The augmentations are chiefly in the votes proposed for the manufacture of shells and cartridges, the organization of railways (700,000 francs), the creation of administrative establishments, the needs of mobilization, military ballooning, the provision of sanitary, artillery, and engineering *matériel*, and fortifications (1,700,000 francs).

MISCELLANEOUS NOTES.

A French company is constructing a dry-dock at Talcahuano, Chile. The construction of the dock walls was carried on under water by means of huge rectangular diving-bells.

The Corinth Ship Canal, now about to be opened, was begun in 1882, but owing to financial difficulties the work did not proceed with the anticipated speed. The dimensions are, length, 6500 metres

(21,325 feet); width, 22 metres (72 feet); depth, 8 metres (26¼ feet).

The closing of the Baltic ports by ice during so many months of the year has caused the Russian government to seek some locality where such a state of affairs does not exist. At present the attention of the government is directed to some of the ports on the Arctic Ocean. Notwithstanding their higher latitude, these ports are accessible during many weeks that the more southern harbors are completely shut in by ice.

The Portuguese government has contracted with the British Maintenance and Construction Company to lay a telegraph cable from Lisbon to the Azores. A former contract with a French company has been abrogated through its failure to begin work within the specified time.

Three additional docks will be built at the British dock-yard at Devonport, one of 600 feet in length and two of 500 feet. The entrances to the docks will be from a basin 700 feet wide with an entrance lock 600 feet long. No. 8 dock at Chatham dock-yard is to be lengthened from 390 to 550 feet.

The resolution agreed to by the Suez Canal Company to deepen its water-way to 8.5 metres (27.9 feet) has induced the chamber of commerce of Marseilles to consider the advisability of improving that port in order to allow the entrance of vessels of greater draught. The proposed improvement contemplates also an extension of area of the harbor and an improvement of the dockage and wharfage facilities. The present unsatisfactory condition of the harbor has made Genoa and Barcelona serious competitors. The French government is interested in the work, and has appropriated 13,000,000 francs to assist in carrying it out.

The failure to float the bonds of the Chignecto Ship Railroad, New Brunswick, is a serious blow to that enterprise, though it may possibly survive it. The object of the ship railroad was to save vessels bound from the Gulf of St. Lawrence to American ports from the long detour around Cape Breton or through the Gut of Canso. But it became apparent at an early stage that the traffic which the road might get would be altogether too light to yield a return on the expenditure and cost of operating.

MERCANTILE MARITIME NOTES.

The year 1892 was an unprofitable one for the great German steamship companies. The North German Lloyd, with a capital stock of ten million dollars and bonds to the amount of about five million two hundred and fifty thousand dollars, was able to declare a dividend of only one and a half per cent. The company, which has hitherto paid most attention to passenger carriage, is now turning to freight traffic, and has established two freight lines, Bremen to Liverpool and Bremen to New York. The Hamburg-American Company has done even worse, owing to light business during the prevalence of cholera. The capital stock of the company amounts to seven million five hundred thousand dollars and the bonded debt to two million one hundred and eighty-five thousand dollars. The entire balance of the receipts after deducting working expenses is devoted to maintenance, so that no dividend was declared. Of the four remaining companies of importance, two were run at a loss, though it was insignificant in amount, while the others paid respectively dividends of two and a half and three per cent.

The *Campania* has not yet broken the record of the *Paris*, 5 days, 14 hours, 24 minutes, but a recent passage was made in 5 days, 15 hours, 37 minutes, and she ran 548 miles on one of the days. This passage was made over the northern route, and the mileage performed was 82 greater than that of the *Paris* on the trip above referred to. Had the *Campania* passed over the route of the *Paris* at the average speed developed on her recent trip, her time would have been 5 days, 12 hours, 13 minutes; so she is quite likely to break the record during the coming season.

L. S. Van Duzer,
Lieutenant U.S.N.

SERVICE SALAD.

Idle Hours in Perigord.

(*From Temple Bar.*)

IT is August, and I have entered into possession of a small house beside the Dordogne at Beynac, a village partly crouching beneath a very high rock, and partly built upon its terraces or ledges up to the inner wall of a feudal castle that was much modified and refashioned in later ages under the pressure of two forces: time, that ruins, and the eternal striving of each generation to attain its own ideal of comfort and elegance. But the grand old keep still rears its rectangular mass behind and far above the later masonry, and when the evening sun shines upon it, the stones, no longer gray, wear again their bright color of six or seven centuries ago. Presently, as the glow moves higher, the battlements and machicolations take a golden clearness that marks every detail against the blue depth of sky whose fire is fading and preparing to change into the calm splendor that mingles with the dusk. Between the base of the rock and the river is just space enough for a road, which is dazzlingly white now, and well powdered with dust; but in winter it not infrequently disappears under water. On the opposite shore, above a shelving beach of yellow pebbles and a broken line of osiers, stretch meadows that are intensely green in spring, and would be quickly so again if rain were to fall; but now they are very brown, and the long-tailed sheep that wander over them, tinkling their bells, like to keep near the Dordogne, where they can moisten their mouths from time to time, and thus help themselves to imagine that they are eating grass. Beyond the reach of meadow, almost at the foot of high wooded hills which mark the boundary of the valley on that side, is a modern *château;* but the architect found his model for it in the past when castles were more picturesque than comfortable. When the amber-tinted towers are seen through the haze of a summer morning against the background of wooded hill, one thinks that in just such a castle as this Tasso or Spenser would have put an enchantress, whose wiles, combined with the indolent influence of the valley, few pilgrim knights taking the eastward way to Roc-Amadour would have been able to resist.

I found the valley so hot in this month of August that, having reached Beynac, I felt no inclination to go any farther. I thought I would stop there until cooler weather came, and live meanwhile principally in the Dordogne. Several families from different parts of Périgord had already come here to spend a mildly exciting and not too costly river season, and there they were—fathers, mothers, sons, and daughters splashing in the blue tepid water, with their clothes laid carefully in little heaps upon the pebbly beach or upon the brown grass by the osiers. Despising the shelter which in more fashionable watering-places is thought indispensable, they lazily undressed and dressed in the open air with an appreciation of sunshine and regardlessness of apparel that was almost lizard-like in its freedom from conventional restraint. I was charmed by the spectacle as I meditated upon the opposite bank. The more I meditated the better I liked the idea of tarrying in a spot where Arcadian simplicity of life was so unaffectedly cultivated. I resolved that I too would take a house at Beynac if there was one to be had, and that I would have what I term my "family caravan" brought up here from that part of France

where I had last seen it. At the *auberge* —the only one in the place—I learnt that there was but a single house still vacant, and that it was not a very beautiful one. A young fisherman started off barefoot to fetch the owner from his village, four miles away. The country had to be scoured for him, so that it was long before he showed himself.

While waiting I went out and amused the fish in the Dordogne by pointing a borrowed rod at them and tempting them with the fattest house-flies I could find, but as soon as they saw the bait they all turned their tails to it. My angling was a complete failure. And yet there were multitudes of fish swimming on the surface; the water seemed alive with them. I concluded that they were observing a solemn fast.

At length the fisherman returned, looking very hot and dusty, and of course thirsty. He was accompanied by a hard-baked man of about sixty,—a peasant apparently, but one who had put on his best clothes in view of an important bargain that was to be made. He had cunning little eyes, and a mouth that seemed to have acquired from many ancestors, and from the habits of a lifetime, a concentrated expression of rustic chicanery which told me that no business was to be done with him without a fight. He led the way to his house, which was on the road just above the river. I came to terms with him for a month, after the expected fight; but it was not until he had gone away that I began to realize that I had not distinguished myself by my wisdom in this transaction. Even the villagers, who are not dainty in the matter of lodging, described the house as a *baraque*. It gave me the same impression when I saw the inside of it, but I closed my eyes to its drawbacks because I had taken a fancy to Beynac, and this was the only furnished dwelling to be obtained there. I thought all the little drawbacks belonging to it, such as the rustic hearth to cook upon, pots with holes in them, rusty frying-pans, deficiency of crockery, and more than a sufficiency of fleas, would be overcome somehow, as they had been elsewhere during my peregrinations in out-of-the way districts, where the traveler who nurses his dignity, and has a proper regard for the comforts of life, never thinks of stopping. But things did not settle down this time quite so quickly as I had expected. After the arrival of the "caravan" I took to fishing—always with the same rod borrowed of the blacksmith-innkeeper—with a zeal that I had not known since I was a boy. I found that things settled down better when I was out of the way. But there was something that settled down only too rapidly. This was the kitchen floor. There was a bare rock at the back of the house over which a little runnel of water gently trickled. In the wet season it lost all modesty and made a lake that rose above the boards and tried to find an exit by the back of the chimney. This explained why the fire needed two days' coaxing and blowing before it would burn, notwithstanding that our servant had been reared in the knowledge of such chimney-places and their humors. It also explained why somebody's foot went through the floor in a fresh place two or three times a day. At the end of the first week one had to stride or jump over half a dozen chasms to get from one side to another. About the same time four or five of the lower stairs gave way from rottenness, so that it needed no little agility to reach the bedrooms. The old man had to come and mend his house, and because he had a guilty conscience he brought a basket of figs with him; but, instead of owning that the wood was rotten, he insinuated that it had been maliciously danced upon.

But the heat was the worst tribulation. The house, with all its windows without *persiennes*,—a detail I had quite overlooked,—faced the south, so that during the hottest hours of the day the sun was full upon it, and the heat was over one hundred degrees Fahrenheit in the shade. It was the most scorching August that had been known even in the south of France for years. The recollection of those burning hours in that shanty will be ever green. Nevertheless, the time spent at Beynac left some pleasant memories. The days were fiery, and when the south wind blew, almost suffocating; but when the sun went down into the west there usually came a beneficent

change. During the few minutes that the golden circle lay seemingly upon the edge of the world, a boat crossing the river appeared to glide over unfathomable depths of splendor; then gradually over the fields of maize and tobacco, and where the yellow stubble of the corn long since reaped had been left, there spread the deep-toned lustre of evening, —divinest light in nature. As the brown dusk filled the valley, and under the sombre walnut-trees the wayside cross became like the spectre of one, shrill voices of old women were heard calling the geese and turkeys that still lingered in the fields. The geese were often left to come home by themselves, after spending the day along the banks of the river. They belonged to various people, but, being eminently sociable birds, they started off together in flocks of fifty or more. Although they must have been causes of jealousy and rivalry among them, they never seemed to quarrel. They knew when it was time to go home by the falling light, and in the dusk I often met them marching along the road like a regiment of soldiers. As they reached houses to which some of them belonged, detachments would fall out and the others would go on. Every bird would return to the place which had for it the sweet associations of its gosling innocence.

It is now night,—the calm summer night without a moon, but spangled with stars. Among those which the Dordogne reflects and holds as if they were its own is the planet Mars, which gleams redly in the midst of a swarm of lesser yellow lights. The river here is broad and still; there is not ripple enough to make a beam tremble. If the stars in the water flash, it is because the rays are flashed from above. Just below the village there are rapids, and a faint murmur comes up from them, but it is borne under by the shrilling of the crickets that have climbed into the osiers and poplars all along by the water's edge. Now and again there is a great splash in the middle of the stream, which makes one think that a fish large enough to swallow some unsuspecting Jonah of Périgord must be there in a playful mood; but this is merely the effect upon the imagination of a sudden noise breaking in upon the monotonous sounds of the night which are so much like silence.

Lured by the freshness of the air and the serene glory of the starlit sky, I wander away down the valley to a spot where the river, all in turmoil, washes and wears away the flanks of rocks rising sheer from its bed like a wall. Looking back, I can see very distinctly the dark mass of the castle and the church by its side high above me against the sky, and every minute or so the lightning flash from a storm far away in the west brightens the sombre masonry and the rock beneath.

Centuries ago in this light, the rock, the fortress, and its church must have looked the same as now. An Englishman, who had campaigned with the Black Prince, standing where I am,—the road was probably a mule-track then,—would have seen against the sky the very picture that sets me dreaming of the past. But the quietude of the summer night might have been disturbed by sounds that are not heard now. It is unlikely that so large a castle, containing so many men-at-arms and officials as must have been deemed necessary to its safety and dignity, should at this early hour have been wrapped in silence more complete than that of the valley. There would surely have been some people breathing the cool air on the platform of the keep besides the watchman, some soldiers pacing the *chemin de ronde*, although peaceful days may have returned to the unlucky land of Guyenne; and the clamor of strong voices would have come down to the river. But now the castle is quiet as the rock that was beaten by the waves of a vanished sea, and those who still live in it are like the keepers of a cemetery. That *donjon*, whose dark form seems to stand amidst the stars, only serves to mark one of the many tombs of feudalism which rise above the smiling but capricious Dordogne like menhirs—monuments of older illusions—along the ocean-scalloped coast of Brittany.

Animated as Beynac became late in the afternoon, when the little society, composed of extraneous particles, met in costumes that were airy, fantastic, ele-

mentary, anything but ceremonious, to exchange civilities in the water, life on the whole was so mildly exciting that when one day a small caravan, drawn by a donkey and preceded by a young man half hidden by a great straw hat and wildly beating a drum, entered the place, there was a great and tumultuous movement of the population. Everybody wanted to know what the donkey and the young man proposed to do at Beynac. On the caravan had been painted "*Théâtre de la Gaîté*," which threw light upon the object of the intruders. The donkey drew up in front of the inn, and the excited crowd waited with ill-contained impatience to see the company of players descend from the battered travelling trunk on wheels. At length a pretty little girl of about twelve, with large and lustrous brown eyes, came out of the box. She was the company. She was in the charge of her mother, who superintended the artistic arrangements, as well as the culinary and financial, but did not venture upon the stage. The young man looked after the donkey and the drum, and filled up his time by catching fish for the company and her mother. The stable of the *auberge* was hired for evening use as a *salle de spectacle*, and at one end a very diminutive stage was set up by means of rough planks and old pieces of carpet.

Everybody who could afford to spend a penny or twopence upon vanity and worldliness went to see the performance. It was quite a fashionable gathering. The best society were by common consent allowed to take the best seats,—very hard benches; the less ambitious crowd behind, with minds fully made up not to allow themselves to be carried by enthusiasm beyond the expenditure of two sous when the plate went round; while favored children, who were not expected to pay anything, because they had nothing, climbed into the mangers, and packed themselves as close together as aphides on a rose-stalk. The stable had been carefully cleaned, but the horsey odor that belonged to it could not be swept out. This, with the bad ventilation, and a temperature almost equal to the hatching of eggs without hens, was a drawback; but the audience was in no humor to be critical. A small handbell was rung, two pieces of old carpet were drawn back, and the little girl made her bow to the audience in a costume as near to that of Mignon as she and her mother could make it. She sang "*Connais-tu le pays où fleurit l'oranger?*" and other airs from the opera in a small, bird-like voice, unaccompanied by any music. For three hours the child sang, acted, and danced in the suffocating stable, lighted by two petroleum lamps. The next day I saw Mignon sitting on one of the shafts of the caravan and gnawing the "drumstick" of a fowl. The child-actress was the prop of her mother and the donkey; her talent also kept the youth, who began to agitate the nerves of Beynac with his diabolical *rataplan* hours before each performance.

One morning, soon after sunrise, the donkey, which had begun to think that this time it had really been pensioned off, was put into the shafts, and the caravan gradually disappeared upon the white road. Then the village became quite dull again; but it was roused from its torpor by the annual *fête*. This was the chief event of the year. The peasants came in from the scattered villages and from the isolated farms lying in the midst of the chestnut woods. All the women coifed themselves with their best kerchiefs, the heads of most of the young girls being resplendent with brilliant colored silk. This coiffure resembles that of the Bordelaise, but it is not so small, nor is it folded so coquettishly. There was much love-making—sometimes exquisitely comic by its rustic *naïveté*—and there was a good deal of dancing to the maddening music of two screaming hurdy-gurdies.

At Beynac I made the acquaintance of a Frenchman, who, after angling for riches,—a sport at which he lost much bait and caught nothing,—turned all his attention to the fish in the Dordogne. He resolved that he would run no more risk by casting his bread upon the wider waters, but that he would make the most of what remained to him by withdrawing to some river-side nook, where his love of the unconventional and his taste for a free life in the open air could expand, emancipated from all servitude to society,

including the necessity of keeping up what is called "an appearance."

What to my mind helps greatly to make France such a pleasant country to live in is the large amount of social liberty that one enjoys there. Except in great towns, and in those places which are thronged at certain seasons by cosmopolitan crowds, people can live as simply as they please, and they can wear anything, however cheap, or even shabby, without risk of being diminished on this account in the opinion of others. They are liked or disliked, respected or despised, as their conduct and dealings become known and judged.

The Otter—this nickname had been given to my new acquaintance by those who were jealous of his fishing skill—when he was out in his boat never wore anything finer than corduroy trousers, a short blue jacket of the cotton material from which blouses are made, a straw hat, and *espadrilles*, into which he put his bare feet. No heavier clothing is consistent with happiness in such a climate as that of tho Dordogne valley during the summer months. When, by gliding over the transparent water, which revealed the pebbles at the bottom almost in the deepest places and the shoals of fish as they passed up and down the stream, the temptation to plunge became irresistible, the blue jacket and the other garments were thrown off in a few seconds, and the fish were startled by the descent of a black head and beard, followed by the rest of that human form which Carlyle has compared to a forked radish.

Sometimes the Otter made nocturnal expeditions far up the channels of the little streams that fall into the Dordogne. Then he was after crayfish. The ordinary method of catching these crustacea—namely, with a piece of netting covering a small wire hoop, and baited with meat—had little charm for him. There was another, much more in keeping with his passion for movement. He would walk up the beds of the streams quite heedless of the water, holding in one hand a lantern, and having the other free to make a grab at every crayfish he might see scuttling out of harm's way over the stones or sand. As he went slowly up the narrow valleys, the gleam of his lantern through the osiers, the tall loosestrife and hemp-agrimony startled the owls, the hedgehogs, and the weasels; but not the sound of water wailing in the darkness, nor the cries of disturbed animals, nor the weird blackness of overhanging trees that hid the stars troubled his nerves. On he went, through water meadows at the bottom of gloomy little gorges, and by the fringe of the forest, until he had wandered miles away from Beynac. We very nearly met one night, both being out with the same object in view. I, however, had very little of his zeal for the sport, and was less interested by the crayfish than by the fantastic indistinctness of trees and shrubs and flowers, which, in the light of the stars and the lantern, seemed to belong to a world with which I was but vaguely familiar, although I had traveled all over it in dreams.

Sometimes I used to go out fishing with the Otter on the Dordogne. When the casting-net was left at home (it was of little use when the water was clear) chub-fishing with the flying-line was generally the chosen form of sport. Here I may say that my companion, who could turn his hand to anything, made his own rods from hazel sticks. Where the water was sufficiently deep the boat was rowed and steered with a single short oar, but where it was shallow much better progress could be made by punting. These are the two methods invariably used by the fishermen and ferrymen of the Dordogne, and it is astonishing with what success they can get a boat up the rapids without having recourse to the towing-line. When we went chub-fishing, we took the boat a mile or so up-stream, and then let it drift down with the current near a bank that was fringed with willows and acacias. Although we needed only six inches of water, the depth was sometimes miscalculated, and we went aground on a bank of pebbles. Then the Otter, whose bare feet were always ready for such emergencies, stepped out into the sparkling current and hauled or pushed the punt over the obstacle. What with rapids and banks of pebbles, the excitement of boating on the Dordogne above Lalinde never flags. It looked

very easy to throw a line with a worm on it towards the shore, and then draw it back, but the chub showed such little eagerness to be caught by me that I generally preferred to steer and watch my companion pulling them out as he stood in the prow, his face nearly hidden under the thatch of his straw hat. When the fish were in a biting humor, he had one on his hook every time he threw the line.

There are few trout in this part of the Dordogne, but in tributary streams like the charming little Céou they are plentiful. Carp are abundant, but they are very difficult to take with the line, and even with the net, except in time of flood, when they get washed out of their holes, and the water being no longer clear, their very sharp eyes are of little use to them. Then a lucky throw will sometimes bring out two or three carp weighing three or four pounds each. The fish commonly caught are mullet, perch, barbel, gudgeon, bream, and chub. As a food-supplying river, the Dordogne is one of the most valuable in France, and, owing to the rapid current and the purity of the water, the fish is of excellent quality.

The fixed belief of all the river-side people in this and other valleys is that fish should be cooked alive. You enter an inn and ask for a *friture* of gudgeon. In a few minutes you see the victims which have been pulled out of a tank with a small net on the end of a stick jumping on the kitchen table, and they are still jumping when they go into the boiling grease. I am not among those who have grown callous to such sights, common as they are in France. To see fish scraped, opened, and cooked while still alive gives me disgust for it when it afterwards appears on the table. I can imagine somebody saying, "Why look at what goes on in the kitchen?" That somebody does not quite understand what rural France is. In a country inn we invariably pass through the kitchen to reach the room set apart for guests, and it has often fallen to my lot to seek rest, shelter, and food in a poor *auberge*, where the kitchen is also the common room for the family and outsiders.

September came and I was still at Beynac, although I had found another house. The fruit season was then at its height. Peaches were sold at three sous the dozen, a good melon cost about the same sum, and figs were to be had almost for nothing. On these terms quite a mountain of fruit could be placed upon the table for half a franc. There was often no necessity to run into this extravagance, for the people at Beynac are good-natured, and they would frequently send a basket of their earliest grapes or other fruit, and although the present might have been made by a woman with bare feet, her feelings would have been hurt had money been offered in return.

One day rather late in the month, having grown ashamed of inactivity, I carried my knapsack down to the river and put it into the Otter's smallest boat, which he called the *périssoire*, although it was not really a canoe. He was the chief builder of it, and as a contrivance for bringing home to man the solemn truth that life hangs to a thread or floats upon a plank—perhaps the worst state of the two—it certainly did him infinite credit. It was a flat-bottomed, outrigged deal boat, very long, and so narrow that to look over one's shoulder in it was a manœuvre of extreme delicacy, especially where the rapids caused the water to be in wild commotion. I was told that it would go down-stream like an arrow, and so it did. There was no need to row hard, for the current took the fragile skiff along with it so fast that the trees on the banks sped by as if they were running races, and every five minutes brought a change of landscape. It was very delightful; only one sensation of movement could have been better,—that of flying. The water was as blue as the sky above, and over the valley, the wooded hills, and naked rocks lay the sunshine of early autumn, tender in its strength, mingling a balm with its burning. I seemed to be floating swiftly but gently down some lovely but treacherous river of enchanted land. And where is the river that lends itself better to this illusion than the Dordogne,—ever charming, changing, and luring like a capricious, fascinating, and rather wicked woman? Now it flows without a sound by the forest, where the imagination places the fairy people and the sylvan deities; now it roars in the shadow of

the castle-crowned and savage rock, over which the solitary hawk circles and repeats its melancholy cry; now it seems to sleep like a blue lake in the midst of a broad, fair valley, where in the sunny fields the flocks feed drowsily.

The depth of the water was as variable as the strength of the current. Sometimes I saw the stony bed seven or ten feet below, and then quite suddenly the boat would get into rushing water that sparkled with crystal clearness over a bank of pebbles, and I expected momentarily to hear a grating noise and to feel myself aground; but the little boat went over the shallows like a leaf. I passed a bank large enough to be called an island. The water had not covered it for months, and it was all thickly overgrown with persicaria, which the late summer had stained a carmine-red, so that the island was all aflame. The swallows that dipped their wings in the water, the kingfishers that flew along the banks or perched on the willow stumps, and the graceful wagtails were for some miles my only river companions, excepting, of course, the fish, with which a treacherous current or a sunken rock might have placed me at any moment on terms of still closer intimacy. But time flew like the boat, and I soon came in sight of a charming little village whose houses with peaked roofs seemed to have been piled one upon another. Here upon stones in the water I recognized the human form supported by two bare legs, and in the posture as of a person about to take a dive, which is not perhaps very graceful, but is one that certainly lends character to the river-side scenery of France. Two or three women were rinsing their linen.

On nearing St. Cyprien the current became swifter and the turmoil of the rapids so great that I prepared my mind here to being swamped by the waves. The question whether I would abandon or try to rescue my knapsack after the wreck was distressing. The risk being over, it was with a sigh of relief that I beached the boat, now half full of water, at the nearest spot to the small town. Having moored it and given the sculls into the charge of a man whose house was close by, I was soon walking in the warm glow of the September afternoon by cottage gardens where the last flowers of summer were blooming.

The small burg of less than three thousand inhabitants which bears the name of the African saint was probably, like many others, much more important in the Middle Ages than it is now. In accordance with the building spirit of the past, so strongly pronounced throughout Aquitaine, and obviously inspired by a defensive motive, the houses are closely packed together on a steep hill-side. A few ancient dwellings, notably one with a long exterior gallery, show themselves very picturesquely here and there. The town grew up at the foot of an abbey, of which the church still existing exhibits a massive tower that might easily be mistaken at a little distance for an early feudal keep. The lower part of this tower is Romanesque. The interior of the church is in the very simple, pointed style of the twelfth century, but the interest has suffered much from restoration. What is chiefly remarkable here is the carved oak of the reredoses and pulpit.

There being still an hour or more of daylight, I continued the ascent of the hill above the houses and the solemn old church to find a certain Château de Fâges which I knew to be somewhere in the locality. A woman working her distaff and spindle with that meditative air which the rustic spinners so often have, her bare feet slowly and noiselessly moving over the rough stones, pointed out to me a little lane that wound up the deserted hill between briers bedecked with scarlet hips, then bits of ancient wall to which ferns and moss and ivy clung; all of which brought back a train of old impressions in the waning golden light. I passed through vineyards from which the grapes had been gathered, then rose by broom and blackthorn to the level land. I looked in vain for the castle. I might have searched for it until darkness came but for the help of a boy who was taking home a goat. At length I found it lying in a hollow, a sufficient sign that it was never a stronghold. In feudal times it was probably a small castellated manor, belonging, perhaps, to a knight who could not afford to build himself a *donjon* on some eminence

and to fortify it with walls; but centuries later what remained of the original structure was patched up and considerably enlarged. Now, as I saw it in the dusk, it seemed a very ghost-haunted place. The building had not fallen into ruin; it was still roofed, and might easily have been made habitable; but there was no glass in the windows; all the rooms were silent with that silence so deep and sad of the long-deserted house which is not sufficiently wrecked by time and decay to have lost the pathos of human associations. The breath of the dying twilight stirred the ivy-leaves upon the wall of the detached chapel where never a person had prayed for many a year, and the goblin bats came out from the shadowy places to flutter against the pale sky. Then I felt that I had lingered long enough on this desolate spot, and the thought of the awaking hearths brightening the little town with the blaze of wood made me hasten through the heather and gorse that had grown up on the grave of many a vine.

The next morning saw me afloat again. As I was getting away from the shore a man called out to me, "Your boat is worth nothing! If you try to pass the third bridge you will go to the bottom!" He spoke very seriously, and I wished to take further counsel of him; but having once got into the current, it carried me off at such a rate that while I was thinking of putting a question I was taken out of speaking distance. I shot through one of the arches of the first bridge, and soon found myself in water that was a little rough for my poor skiff. Here were the rapids again. I had been warned against these before I left the inn. There was no turning back now, and if the commotion of water had been ever so great I should have had to take my chance in it. The Otter's advice when I came to rapids was to pull as hard as I could in the middle of the current. I followed it, and my shallow boat, which had just been described as worthless, darted into the midst of the turmoil and went through it all as swift as a swallow on the wing. The river, however, had risen considerably during the night, and the strength of the current having much increased in consequence, my belief in the *périssoire's* worthiness was not sufficient to make me run the risk of being swamped at the third bridge. I therefore landed at the next one, which was close to the village of Siorac. It seemed that I had only just started from St Cyprien, and yet I had traveled about six miles. With the help of a willing man the boat was carried to the railway station, which was not far off, and its journey home having been paid, I ceased for a while to be a waterfarer, and became again a wayfarer.

E. Harrison Barker.

Money.

(*From St. Louis Globe-Democrat.*)

Absolutely pure gold is said to be twenty-four carats fine.

The gold coins of Great Britain contain one-twelfth alloy.

The Spartans had an iron coinage, no other being allowed.

The United States silver three-cent piece was first coined in 1851.

The English mint was established by Athelstane about 928.

From 1828 to 1845 platinum coins were minted in Russia.

The first coining-machine was invented by Bruchner in 1553.

The notes used by the Bank of England cost exactly one cent each.

Julius Cæsar was the first man to put his own image on a coin.

Aristotle says that "money exists not by nature, but by law."

The first colonial coinage was minted in Massachusetts in 1652.

In the tenth century there were thirty-eight mints in England.

The American cents of 1787 bore the motto, "Mind your Business."

The Lydians were the first to coin money, about B.C. 1600.

Homer mentions brass money as in use B.C. 1184, among the Greeks.

Brass money was coined in Rome by Servius Tullius as early as 578 B.C.

During the reign of Henry VIII. twenty-three to twenty-five per cent. of coin metal was alloy.

The coinage of trade dollars began in 1874, and was discontinued in 1878.

The most ancient coins are of electrum, four parts of gold to one of silver.

The coinage of twenty-cent pieces began in 1875, and was discontinued in 1878.

Before the days of coined money the Greeks used copper nails as currency.

Herodotus says that Cræsus was the first sovereign to make coins of gold.

In 1503 the first English shilling was minted. It bore the king's image.

The first English laws against counterfeiting were issued in 1108 by Henry I.

The United States mint was established in 1792, and at once began operations.

Silver was first coined in Rome in B.C. 269, when Fabius Pictor set up a mint.

In 1844 Napier's coin-weighing machine was put in use in the Bank of England.

Over one thousand series of Greek coins, issued by independent cities, are known to exist.

In the fifth century before Christ refined copper was deemed as precious as gold.

The trade dollar was intended for use in commerce with China, India, and Japan.

The first American coins were made in England in 1612 for the Virginia Company.

The first English gold coins were minted in 1257, in the forty-second year of Henry III.

In 1631 the invention of milling the edges of coins, to prevent clipping, was introduced.

At the beginning of the Christian era the relative values of gold and silver were as one to nine.

Down to the Norman conquest the Britons had "living money" and "dead money," the former being slaves and cattle, the latter metal.

English sovereigns were first minted in 1489. They were called by various nicknames.

During the reign of Numa Pompilius, 700 B.C., an experiment was made with wooden money.

The bronze cent and two-cent pieces were first coined in 1864, and the nickel half-dime in 1866.

The earliest Greek coins bore a lion or tortoise on the obverse and punch-marks on the reverse.

Wampum was adopted by the New England colonists in all their dealings with the Indians.

English coin was first made a legal tender in 1216. Before this rents had been paid in produce.

In 1237 the English coined gold pennies which weighed 1-120th of a pound, and passed for twenty pence.

Vermont and Connecticut coined coppers in 1785. New Jersey and Massachusetts did the same in 1786.

Paper money was first issued by the notorious John Law. His issues exceeded one hundred and twenty million pounds.

In 1620 the first large copper coins were minted in England, putting an end to private leaden tokens.

In the early years of this century there were thirty-three tons of silver to one of gold in circulation.

The Romans issued private or consular coins which bore the names of every leading Roman family.

Tobacco and warehouse receipts issued after it was stored were both used in Virginia as money.

In one thousand ounces of our gold coinage there are nine hundred ounces of pure gold, ten ounces of silver, and ninety of copper.

In the world's mints from 1850 to 1890 there were coined nine thousand one hundred and ninety-four tons of gold and eighty-one thousand two hundred and thirty-five tons of silver.

From 1662 to 1690 the accounts of the New Netherlands were kept in wampum, beaver- and raccoon-skins.

Arabic coins have a sentence from the Koran, and, generally, the caliph's name, but never an image.

The purchasing power of money in the days of the Roman emperors was about ten times what it is at present.

The plan of a decimal coinage for the United States was suggested by Jefferson in 1785, and adopted by Congress.

During the reign of Victoria the Indian government has coined two million pounds of gold and two hundred and six million pounds of silver.

When Leyden was besieged by the Spanish army in 1574 the city government issued credit notes on leather.

The average life of a note of the Bank of England is a little less than seventy days. Notes are never reissued.

The currency of the Argentine Republic consists altogether of paper notes, ranging in value from one cent up to one hundred dollars.

A Roman mite was thirty-five-hundredths of a cent; a farthing was sixty-eight-hundredths; a penny, thirteen and seventy-five-hundredths cents; a pound thirteen dollars and seventy-five cents.

Baring says that in London, during the crisis of 1847, it was found impossible to borrow any money whatever on a sum of sixty thousand pounds of silver.

The earliest American coinage was made for the Virginia Company at the Bermudas. The coins were of brass, with a "hogge on one side, in memory of the abundance of hogges that were found on the islands at their first landing."

France, Belgium, Greece, Italy, and Switzerland constitute the "Latin Union." Their coins are alike in weight and fineness, differing only in name. The same system has been partly adopted by Spain, Servia, Bulgaria, Russia, and Roumania.

Judas sold his Master for thirty pieces of silver; that is, thirty Roman pennies, about four dollars and twelve and a half cents. One Roman penny was a good day's wages for an agricultural laborer.

In 1684 Charles II. minted tin, and tried to make it pass current. After his abdication James II. minted gun metal and pewter, and endeavored to make purchases with the coins.

The United States coins fixed by Congress in 1786 were the gold eagle and half-eagle, the silver dollar, half-dollar, quarter-dollar, dime, and half-dime.

The French Republic Victorious.

"VICHY" A TRADE-MARK.

THE French republic, who is the owner of the celebrated Vichy Springs, sued Carl H. Schultz, of New York, for manufacturing an imitation of these waters.

Judge Wm. K. Townsend, of the United States Circuit Court, in a very exhaustive decision on a demurrer, decided that the name "Vichy" is a commercial name, and, as such, is protected under the Industrial Property treaty.

The genuine Vichy waters exported by the French republic have a neck label on every bottle with the name of Eisner & Mendelson Co., Sole Agents, New York, printed thereon.

"We are advertised by our loving friends."

A Mellin's Food Girl.

ALICE CORINNE COX, LA GRANGE GA.

Give the Baby Mellin's Food

if you wish your infant to be well nourished, healthy, bright and active, and to grow up happy, robust, and vigorous.

OUR BOOK FOR THE INSTRUCTION OF MOTHERS,

"The Care and Feeding of Infants,"

will be mailed free to any address on request.

The Doliber-Goodale Co., Boston, Mass.

The Strength of the French Army.

THE uncertainties of an international character accompanying the electoral campaign in Germany give more importance than ordinarily to official statements relative to the military strength of European nations. Speaking only of France, the war budget for 1894, which does not differ much from the budgets of former years, contains interesting information about the *effectifs* or number and classification of the French army.

It would be composed in 1894 as follows if the ministerial budget estimates are accepted by the Deputies, which is most likely to occur: Military staffs, 3678 officers and 821 men; military schools, 590 officers and 2713 men; *hors cadres*, that is, not attached to any regular organization, but employed in divers services, 2704 officers and 468 men.

The infantry consists of one hundred and sixty-three regiments of the line, forming a total of 10,322 officers and 247,622 men; thirty battalions of foot chasseurs, 942 officers and 25,932 men; four zouave regiments, 856 officers and 12,218 men; five battalions of light infantry of Africa, 155 officers and 7605 men; four companies of disciplined fusileers; two regiments of enrolled foreigners; Europeans; four regiments of Algerian sharpshooters. Total, 12,377 officers and 317,905 men.

In the cavalry are eighty regiments of French cavalry, forming a total of 3413 officers and 63,010 men; six regiments of chasseurs of Africa; eight companies of horse recruiting or *remonte;* four regiments of spahis. Total, 3906 officers and 73,856 men.

The artillery consists of sixteen battalions of fortress artillery; thirty-eight regiments of artillery, comprising 466 batteries, 1463 officers and 24,854 men; batteries in Algeria and Tunisia; two regiments of *pontonniers* or pontoon-builders; ten companies of workmen; three companies of artificers; mountain batteries and musicians of the artillery schools. Total, 3719 officers and 75,815 men.

Military engineering, gendarmerie, and divers other corps have to be added to the list, the grand total of which represents the active army of France, which will be composed in 1894 of 28,555 officers and 536,048 men.

A Singular Illusion.

A GOOD STORY WHICH WAS TOLD BY A LOUISVILLE MINISTER.

THAT was a good story which the Rev. C. J. K. Jones, of Louisville, told in a Boston pulpit. He said,—

"An alarmist always reminds me of a friend of mine who was a commander at the battle of Round Mountain. It was a hot fight,—one of the hottest of the war. At a particularly intense part of the action my friend stood beside his horse scanning the field with his glass and directing the troops. He told me it seemed as if the fire of the whole Confederacy was centered on him, the bullets flying thick around him.

"Suddenly he felt a minie ball singing in the air and he felt something strike his leg. But the occasion was urgent and he kept up his glass. There was another 'pin-z-z,' and he felt another strike. And so it continued.

"The captain at last lifted up his hand and prayed: 'Oh, Lord, I can go home to my wife and children without either of my legs, but, oh, Lord, let me get home.'

"Finally there came the shouts of victory. The battle was won. With a long-drawn sigh the captain turned. He shouted to his orderly at a little distance: 'I'm wounded, Jim. Come and help me on my horse; I must go home. It's my last battle.'

"'No, I guess not,' replied the orderly.

"'What's the matter? Come, hurry up, I'm wounded.'

"'If you want me to help you, come here,' sang out the orderly.

"'But what's the trouble? Why can't you come here? Don't you see I'm wounded and almost dying?'

"'Oh, no, you are not,' sang out the orderly again.

"'Come here, instantly, you rascal,' shouted the commander.

"'No, I won't; that's the biggest nest of yellow jackets there I ever saw in my life,' was the final laughing reply of the orderly.

"The storming swarm of hornets were the only minie balls that had struck him."